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HOUSING AND SUPPORTIVE SERVICES FOR ELDERLY PERSONS IN MANITOBA

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ABSTRACT

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The continued aging of the Canadian population has fuelled concerns over the provision of housing and health care services adequate to meet the needs of older individuals. Concern has been expressed with regard to the capacity of existing service structures to preserve the independence of the recipients of care to the greatest extent possible as well as to the increasing costs of providing these services.

This study provides the results of an empirical evaluation and cost analysis of the provision of housing and supportive services to older individuals. Based on data from interviews conducted with older individuals throughout much of the Province of Manitoba as well as from information regarding home care service utilization, medical claims and in-patient hospital claims, comparisons are made among those living in their own homes in the community and those living in three different forms of seniors' housing (elderly persons housing with support services provided internally; elderly persons housing with support services provided externally; and multi-level care facilities, MLC).

The findings reveal similarities as well as differences among those in the different settings. They provide no evidence that MLC facilities tend to funnel their residents from lower to higher levels of care, thereby restricting access by external applicants. There is no support for concerns that older individuals enter such facilities prematurely to ensure access when needed. There is no indication that those living in residential units of MLC facilities are inward-oriented and cut-off from the outside world. To the contrary, they maintain ties with those on the outside and are socially integrated within. Residents choose their living accommodation based on differential choices (for example, elderly persons housing offers an affordable alternative, MLC facilities are seen as offering greater health care security). Finally, relevant to cost considerations, there is no difference in the use of hospital or medical care services associated with type of residence. With the exception of nursing services, formal home care services are also similar.

The findings are discussed in terms of their implications for policies related to the provision of housing and supportive services to the elderly.

Policy Implications

Introduction

The Interagency Committee on Support Services to Seniors, with representation from Manitoba Health, Housing, Community Services, Highways and Transportation and Health and Welfare Canada - New Horizons, in consultation with the University of Manitoba project investigators, Dr. Neena Chappell and Dr. John Horne, has derived the following policy implications from the Housing and Supportive Services for Elderly Persons in Manitoba - Final Report.

1. The study found no strong support for one housing type as superior to another but rather each housing type has its different strengths. The study indicates that the ability to choose the type of housing to suit individual preferences and perceptions is important. Communities considering housing development should be made aware of the need for a variety of housing models.

2. To the extent that EPH residents indicate economic security as the major reason for choosing that housing type, the study indicates that the Department of Housing is fulfilling its mandate to provide safe and affordable housing through its EPH units.

3. The study found no indication that multi-level care facilities tend to "funnel" their residents from lower to higher levels of care to the exclusion of applicants from other locations. Nor was there any evidence of "premature entry", where individuals enter a multi-level care facility at the EPH level with no care requirement, in order to ensure subsequent

placement in that facility's personal care home should care be required. This may in part result from acceptance into a PCH (MLC or free-standing) not being in the exclusive control of the facility. The provincial Continuing Care Program influences this process both through their involvement in panelling and the management of the waiting list which involves the setting of priorities for admission.

4. There is evidence that seniors residing in the EPH section of multi-level care facilities experience greater social integration than those living elsewhere.

5. Sponsors of MLC facilities should be aware that there is an expectation of service and support that is not currently available through their own resources. While in many instances residents chose to reside in a MLC facility because of the perceived availability of health care, that health care is actually provided by sources other than MLC.

6. Some attention should be directed to the higher use and cost of Continuing Care nursing care by residents of MLC compared with residents of other housing models. It is to be noted, however, that these higher costs for MLC residents are concentrated in rural facilities, and are based on a relatively small number of respondents. Nevertheless, Regional Continuing Care staff and sponsors must continue to monitor this situation closely.

7. The study indicates that seniors outside of Winnipeg are more likely to be hospitalized. This may be attributable to the higher hospital bed to population ratio in rural areas. Since hospital care is the most expensive and not always most appropriate element in the health care system, the availability of alternatives to hospitalization must be of primary importance.

8. Managers and sponsors of EPH(NS) must be made aware that residents of EPH(NS) have a perception of support availability that is untrue. The fact that there is no service provision beyond the provincial home care program should be well publicized. Minimal supports may be developed to respond to the perceived needs of residents choosing this type of housing if a needs identification process indicates that supports are warranted.

   Because of its training implications this finding should be shared with the managers and sponsors of seniors housing.

9. The study provides evidence of the need for the Support Services to Seniors Program. Reasons cited for moving from the previous residence were: to be more independent; the need for better shopping facilities; less ability to manage at the previous residence; needed help/assistance but could not get it where they were; meal programs.

   The study indicates that seniors in all housing types express an unmet need for meal services, transportation assistance, and recreation programs. Funding for support services to seniors is currently available

to groups who design projects to meet such needs, especially meal programs or transportation assistance.

Congregate meals are an important and increasingly utilized element of the Support Services to Seniors Program. Since Congregate Meals are the only service differentiating types of housing, as congregate meals become more available throughout the province, this differentiation will be minimized.

Executive Summary

The focus of this study is an examination of housing and health care as two services central both to the ability for elderly individuals to remain independent in the community for as long as possible and to the cost of services. The objectives of the study are to:

1) Compare elderly persons living in their own homes in the community, in elderly persons' housing where support services are provided externally - EPH(NS), in elderly persons' housing where support services are provided from within - EPH(S), and in senior citizens' housing where support services are provided internally as part of a multi-level care facility (MLC). Residents within the four different settings are compared in terms of: independence, feelings of security, social integration, contact with the outside world, services received, and overall well-being. Numerous socio-demographic and health factors are taken into account in these analyses. Elderly persons living in these different settings are also compared in terms of their reasons for moving into and remaining in their current locations.
2) Assess the funnelling hypothesis that multi-level care facilities tend to accept patients into their higher level of care from their own internal lower levels of care sections rather than those external to the facility and assess the premature entry hypothesis that individuals enter the lower level of care within a multi-level care facility in order to guarantee placement in the higher level of care.
3) Compare the cost of existing services as currently provided in the different settings and compare the estimated cost of providing appropriate

services to those eligible based on need in the different settings should the data reveal some individuals not receiving services for which they may be eligible.

Data were collected on a province-wide basis (excluding the two northern regions) using a cluster random sample technique. Interviews were conducted with individuals in each of the four settings while ensuring that both Winnipeg and non-Winnipeg representation was maintained. Within multi-level care facilities, both those in joint managed and those in juxtaposed facilities were included. Interview data for each individual were linked with home care information, medical claims, and in-patient hospital claims data. In addition, program information about residents in personal care homes was also recorded. Data analyses utilized multivariate techniques, taking into account several potential confounding influences.

Characteristics of those living in any of the three different types of seniors' housing, whether it be EPH(NS), EPH(S), or MLC, tend to be similar to one another and different from those of individuals living in their own homes in the community. Those living in their own homes tend to be male, are more likely to be married, are more likely to have been employed in higher status, non-homemaker occupations, and have higher levels of income. Those living in any of the three types of seniors' housing are more likely to be female, to be widowed, and to have been employed in lower status or homemaker occupations, and consequently to report lower levels of income.

Importantly, however, residents in the four different settings do not differ significantly from one another in terms of disability or informal assistance.

In terms of feelings of independence, residents of all three types of seniors housing, but most especially those residing in EPH(NS) and EPH(S), report a sense of privacy without infringement on their autonomous decision-making. It is community living which can be related to feeling less able to make autonomous decisions. Other factors, notably functional disability, believing one's income is inadequate, and being married, are also related to feelings of less independence.

Residents of the four different types of settings differ little in terms of the importance they attach to feelings of security. Virtually everyone considers feeling secure to be important. However, those living in MLC facilities or EPH(S) are more likely to feel that someone is in fact close by in the event of an emergency. Those living in MLC facilities are the most likely to feel their residences are secure from burglaries or other intrusions and to view medical care as available if needed. In other words, residents of MLC facilities in particular tend to express greater feelings of security than do residents of the other three housing types. The regional (non-Winnipeg/Winnipeg) factor is also important here with non-Winnipeg residents generally feeling more secure than urban Winnipeg residents.

In terms of overall social integration, this study lends no support to an argument of greater isolation among residents within senior citizens' housing. To the contrary, residents of the three seniors' housing types examined here have greater interaction overall with others than is true of those living in the community.

Involvement in activities internal to the setting and activities external to the setting were also examined. Very few differences between the settings emerged. The data do not support any claim that those who live in elderly

persons' housing or seniors' housing tend to become inward directed in their activities and correspondingly cut off or decrease their activities external to the location. Findings support a hypothesis of lack of differences between the settings.

In terms of the utilization of formal services, overall, those living in the community use fewer types of services than those living in any of the three types of seniors' housing when comparing group means. This is so despite similar levels of functioning among the residents of the different settings. In addition, those with better functioning, those with fewer chronic conditions, Winnipeg residents, and those who are married tend to use fewer services. Given all of the various services which individuals can receive, only a small proportion of them show differences by residential location. For those for which there are differences, there are no surprises. Those which may be unique to an elderly persons' housing environment are more likely to be used by those living in that setting (such as congregate meals) and those living in the community are more likely to utilize those services required to be maintained in the community (such as homemaker/household tasks and handyman services).

Overall well-being was measured broadly in terms of economic, health, and psychological factors. The community living elderly have better economic health in terms of having more money and better overall life satisfaction or happiness than residents of elderly persons' housing, whether with or without services. Interestingly, residents of MLC facilities, while being disadvantaged economically and in terms of health when compared with the community dwelling residents, nevertheless report similar levels of happiness and life satisfaction. Whether this is in recognition of their need for specialized care is unknown.

Respondents were also asked their reasons for moving. Not surprisingly, those in MLC facilities were the most likely to report having moved to be near better health care facilities while those living in EPH(NS) and EPH(S) were the most likely to report moving for affordable rent. Those living in MLC facilities were also the most likely to have moved to be near a meal program. In other words, it would appear that the system is working as planned, that is, individuals move into these places for the reasons for which they were established. However, in other respects, such as the characteristics of the individuals living in the three types of seniors' housing and their feelings of security and utilization of formal services, few differences are apparent, suggesting similarities among the residents in these respects.

In terms of the funnelling hypothesis, approximately 12% of individuals residing in personal care homes associated with multi-level care facilities, whether juxtaposed or joint managed, came from the housing section of that facility. Assessments to determine whether this 12% figure was high or low did not provide any support for an interpretation of the figure as inordinately high. There is, however, a clear tendency for freestanding personal care homes to accept more individuals from hospitals and other personal care homes (these are individuals who require higher levels of care) than do multi-level care facilities.

In terms of the premature entry hypothesis, there is no support for grouping those living in multi-level care facilities together as different from those living in the community. Few differences emerge when comparing individuals living in juxtaposed facilities, joint managed facilities, and those living in the community in terms of functional ability, number of chronic conditions, assistance with basic activities of daily living,

assistance with instrumental activities of daily living, number of primary caregivers, and income.

In terms of cost, formal home care does not generally differ across the housing groups with the notable exception of nursing services. For nursing services the hours and costs per user are significantly higher for those living in MLC's. That is, those receiving these services are receiving more of them, although a similar number are receiving nursing services in all settings. The use of hospital and medical care does not differ across the housing groups after adjusting for multi-group differences in (I)ADL and socio-demographic characteristics. In addition, seniors who use nursing services obtain a variable proportion of these services from sources other than the formal home care program, depending only slightly on their housing arrangements. The program equivalent costs of nursing services obtained from outside the formal home care program are non-trivial and should be included in any comprehensive assessment of support services where there is potential for increased or decreased public funding. Finally, with the exception of congregate meals, there is little empirical basis for differentiating one type of elderly persons' housing from another in the support services dimension. It should be noted that, at the time of this study, support services consisted primarily of congregate meals. Other support services had not yet been developed.

In terms of possible unmet need, there is no striking difference across housing groups in the proportion of seniors reporting unmet need for services. There is an apparent preference among all housing groups for some additional services including nursing care and homemaker services that are available to others through the formal care program. There is also an apparent preference

across all housing types for some additional services, especially meal services, transportation assistance, and recreation programs that are now available only in some elderly persons' housing. A large majority of those reporting an unmet need require some or alot of assistance in instrumental activities of daily living and in consequence may be representing false negatives in service delivery terms (i.e., otherwise eligible seniors who receive no services). Finally, a small minority of those reporting an unmet need have no measured functional disability (i.e., require no assistance in instrumental activities of daily living) and might be deemed ineligible for services on this account.

It should be noted that these results are specific to Manitoba and may not necessarily apply to other jurisdictions. Further, they reflect health and housing operations in place during 1986.

HOUSING AND SUPPORTIVE SERVICES FOR ELDERLY PERSONS IN MANITOBA
FINAL REPORT

Introduction

As Canada's older population continues to grow (Powell and Martin, 1980), so too does concern over the adequate provision of services to meet the needs of the increasing numbers and proportions of elderly individuals. Concern surrounding the provision of services focuses on both the ability of the existing structure of services to maintain the independence of the recipients of care to the greatest extent possible, and the rising cost of these services. Housing and health care are two services which are central to both of these issues - the ability to remain independent in the community for as long as possible and the cost question.

Concern over these two issues is confounded by the fact that the health care system and some of the most costly aspects of that system are oriented to medical care (Clark and Collishaw, 1975), an emphasis considered ill-suited by many (Chappell et al., 1986; Mishler, 1981; Estes, 1979) to adequately meet the needs of an aging population. The health care system also has a concomitant focus on institutional care (both acute hospital care and long-term institutional care of elderly persons), similarly considered less than optimal for older persons. This is not to deny that such specialized care is required at times. Rather, it is to argue that the provision of more community and social services, within and to several housing alternatives, has the potential for decreasing the use of costly medical services and long-term institutional care. That is, the provision of community services spanning a

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Note: Policy recommendations following from this report may be obtained by writing N.L. Chappell, Director, Centre on Aging, 338 Isbister Building, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

range of alternatives, also known as supportive housing because it combines housing and support services in an integrated approach, has much potential. It should also be noted that this approach is one which elderly individuals themselves favour (Spasoff et al., 1978; Blackie, 1983; Fengler and Danigelis, 1983).

In this study, support services are defined as a range of types and intensities of services in the basic living category (i.e., not care services), such as: meals, transportation, escorts, handyman services, telephone reassurance, and social and recreational activities. Support Services to Seniors is a program aimed at supporting seniors in their efforts to maintain their independent community living status.

The objectives of this study relate directly to the two issues identified above. They include:

1a) Compare elderly persons living in their own homes in the community, in elderly persons' housing* where support services are provided externally, referred to throughout as EPH(NS), in elderly persons' housing where support services are provided from within, referred to as EPH(S), in senior citizens' housing where support services are provided internally as part of a multi-level care facility, referred to as MLC. Residents

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* Note: In Manitoba, there are two types of elderly persons' housing. One, public EPH, is housing owned by Manitoba Housing and Renewal Corporation and managed through agreement by local housing authorities or non-profit organizations. All tenants pay rent based on income. This is housing set up under the National Housing Act, Section 40 or 43. The second, non-profit housing, is both owned and managed under the auspices of non-profit organizations, such as culturally specific organizations, which receive some operating monies from both the federal and provincial governments. Some tenants pay rent based on income while others pay rent based on market equivalents. This housing is set up under the National Housing Act, Section 15.1 or 56.1.

within the four different settings are compared in terms of the following outcome measures: independence, feelings of security, social integration, extent of external relations (that is, contact with the outside world), services received, and overall well-being.

b) Compare elderly persons living in these different settings in terms of the factors noted above, taking into account numerous socio-demographic and health factors of the individuals involved.

c) Compare elderly persons living in these different settings in terms of their reasons for moving to and remaining in their current location.

2a) Assess the 'funnelling' hypothesis that multi-level care facilities tend to accept patients into their higher level of care from their own internal lower levels of care sections rather than those external to the facility.

b) Assess the 'premature entry' hypothesis that individuals enter the lower level of care within a multi-level care facility in order to guarantee placement in the higher level of care.

3a) Compare the cost of existing services as currently provided in the different settings.

b) Compare the estimated cost of providing appropriate services to those eligible, based on need, in the different settings, should the data reveal some individuals not receiving services for which they are eligible.

This study provides baseline data in relation to supportive and housing services for the elderly. While decisions are currently being made which have critical consequences for both cost effectiveness and maintenance of

independence, no sound data base currently exists which takes these outcomes into account for the decision-making process.

Present State of Knowledge

As dollars are being spent on various combinations of services and housing, reliable data both on the benefits for recipients and on the cost of such programs are generally lacking. Research in this area has only recently begun and is primarily from the United States. Canadian data are less recent.

Research from British Columbia reports inconsistent findings. Gutman (1978) compared tenants in a building with self-contained suites and with room and board residents that offered personal care (pre and post move) with those in traditional retirement housing offering only self-contained suites. Applicants who did not move in and elderly non-applicants were also included as comparison groups. The former group were found more likely to exhibit higher morale and increased interaction with neighbours 18 months after moving into the building. The study did not pursue whether the increased neighbouring was restricted primarily to instrumental exchanges. The study also suggested no decrease in amount of satisfaction with or visiting with friends after the move into such housing. The study did not, however, examine whether friendships or activities tended to be within or external to the housing units.

Gutman (1980) has also studied individuals living at home in non-age segregated settings with a group living in retirement housing. Her study revealed that tenants in retirement housing had more health problems and functional disabilities than persons of comparable age living at home, suggesting the need for special design features. However, conclusions regarding differential need are not at all conclusive. For example, Stark et

al. (1982) found little agreement among assessors of clients in a community based long-term care program. Assessments did not distinguish clearly between those receiving different levels of care.

Furthermore, research evidence indicates that the use of services by elderly persons is at least determined as much by factors other than need (such as knowledge of services, social class, ethnicity, etc.) as by need itself (Snider, 1980; McKinlay, 1972; Gourash, 1978). Varady (1980) reports that individuals may move from current housing to different types of housing for reasons other than health, including age, living in a racially changing area, living in public housing, living alone, and ethnicity.

Recently, several United States studies have examined social integration in relation to seniors' housing. Some studies show decreased social involvement among residents of seniors' housing (Sheehan, 1986a; 1986b) while others show increased social interaction at least among age peers (Hinrichsen, 1985). Still others report no differences between the elderly living in seniors' housing and those living in their own homes in the community (Stephens and Bernstein, 1984; Kay et al., 1986; Norris et al., 1985; Poulin, 1984). Further, Kay and associates (1986) report feelings of security in knowing services are available if needed among those in seniors' housing.

Specifically in relation to multi-level care (MLC) facilities, the Woods Gordon report (Alberta Department of Hospitals and Medical Care and Alberta Housing Corporation, 1981:22) has noted the lack of rationale for their effectiveness. Nevertheless, arguments abound. Those in favour of MLC include: economies of scale, provision of continual care and thereby a reduction of relocation trauma, adjustment of service levels to meet temporary changes in needs, maintenance of spousal relationships, flexibility of design

to allow long-term changes in the facility's role, attraction of more qualified personnel, feelings of security, and interaction of different levels of patients. Arguments against MLC include: complexity, cost, those living in them tend to become inward-oriented and cut-off from the outside world, size, encouragement of dependency among residents, and that such facilities become funnels to care in which those requiring long-term care must either enter at the lowest level or enter prematurely believing this will ensure a place at the highest level of care when it is needed.

Several studies have focused on the costs of providing home care to the dependent elderly. In the Manitoba/Canada Home Care Study (Health and Welfare Canada, 1982), services and costs received by clients during the first month of admission to Manitoba's comprehensive universal home care program compared favourably with various designated institutional alternatives, suggesting strongly that the program was a cost-effective substitute for institutional care. Two more recent studies have examined service use and cost over longer periods of time in different residential settings. In an American study, Ruchlin and Morris (1987) provide data on the type and cost of services used by elderly/handicapped tenants in a service-enriched congregate housing program. For these individuals, 50% of monthly service costs were found to be accounted for by the provision of formal community social services, 42% by the provision of medical care services, and 8% by the imputed cost of informal care. However, no comparisons were made to the elderly/handicapped living in other arrangements, hence the cost-effectiveness of the congregate housing program could not be determined. In a United Kingdom study, Snell (1985) compared the costs of care of elderly persons living in their own homes to those in residential homes. It was shown that even at very high levels of

physical and mental disability, the costs of care for those living alone in the community were lower than for those in residential care. However, the study included very few dependent elderly in the community sub-sample.

In sum, important contributions have been and are being made through research in the area of supportive housing for seniors. There has not, however, been a comprehensive study conducted in Canada dealing with the outcome and cost questions raised here.

Design of the Study and Description of the Data

Data were collected using face-to-face interviews with those living in the four types of settings. A cluster random sampling technique was used to select respondents to be interviewed. A complete and current listing of all elderly persons' housing (EPHs) in the province (excluding the Norman region) was obtained from the Manitoba Housing and Renewal Corporation (and verified by the Provincial Gerontologist, a local representative of CMHC, and the Manitoba Health Services Commission) and differentiated according to which services, if any, were being provided. If services were provided, information was compiled on whether this was done internally, externally, or through joint management with a proximate facility (multi-level care facilities). A random sample of EPHs (15 in Winnipeg and 15 in non-Winnipeg) providing no services to residents, EPH(NS) was selected first. Five individuals were then randomly selected for inclusion within each of the chosen locations. Stratification by rural-urban location resulted in a study sample consisting of 150 respondents; 75 from Winnipeg and 75 from other areas of the province. All individuals were age 60 or over.

The sample of individuals living in EPHs providing supportive services, EPH(S) was selected next. They were selected in the same manner as those

above but matched by age group (i.e., 60-64, 65-69, etc.) to those living in EPH(NS). Those living in multi-level care facilites (MLCs) were selected in a similar manner and were, once again, matched according to age group with the EPH(NS) sample. Facilities were divided into two types - joint managed (i.e., owned and managed by the same board as another facility but not attached to that facility) and juxtaposed (i.e., physically linked). Interviews were divided between them (75 individuals interviewed from Winnipeg - 38 in juxtaposed facilities and 37 in joint managed facilities - and 75 individuals interviewed from non-Winnipeg - 38 from juxtaposed facilities and 37 from joint managed facilities). Those living in their own homes in the community were drawn on a random basis from those residing in an area proximate to each location selected in the EPH(NS) sample using postal codes and matched by age group with those in the latter sample.

All respondents were interviewed during the summer and fall of 1986. The overall refusal rate for the study was 22% and ranged from 10.9% for non-Winnipeg respondents to 30.7% for respondents living in Winnipeg. The ineligibility rates due to such factors as relocation, death, hospitalization and institutionalization were 27.3% (overall), 31.7% (Winnipeg), and 22.4% (non-Winnipeg). In instances where potential respondents were either unable or unwilling to participate in the study, matched replacements were used. In total, 600 respondents were interviewed including 300 in Winnipeg and 300 in non-Winnipeg (see Table 1).

The interview data include standard demographic variables as well as information on residential and neighbourhood locations, overall well-being, recreation, social networks and social supports, health, and service utilization (see Appendix A).

Table 1

Composition of Study Sample

Type of Residence	Winnipeg		Non-Winnipeg		Total	
	N	%	N	%	N	%
EPH - no services provided internally	75	25	75	25	150	25
EPH - services provided internally	75	25	75	25	150	25
MLC - juxtaposed	38	13	38	13	76	13
	} 75	} 25	} 75	} 25	} 150	} 25
- joint managed	37	12	37	12	74	12
Community	75	25	75	25	150	25
Total	300	100	300	100	600	100

The interview data were linked with home care, medical claims, and in-patient hospital claims data. Information concerning the respondents' use of home care services was obtained from the Department of Health's Office of Continuing Care files. For those receiving home care services, monthly utilization data were obtained for the period January 1, 1985 through June 30, 1986. The services referenced included: nursing care (VON, LPN, direct nursing care, other nursing care), therapy services, volunteer services, direct social service, respite care, adult day care, day hospital services, home support workers, home care attendants, homemakers, and supplies. For each service received, data were also collected on the total number of hours of service provided (per month) and total cost of service provision (per month). Unit costs specific to each type of service were obtained from the Office of Continuing Care to convert the monthly totals of hours per services into monthly costs of service. The unit cost data used for these conversions are shown in Appendix B.

Three additional types of health utilization data were obtained from the Manitoba Health Services Commission. These included data on: (a) medical claims; (b) in-patient hospital claims; and (c) status of residents in a personal care home. For all respondents having given prior consent for access to such information (N = 527 or 88%), medical claims data were obtained for the period January 1, 1985 through June 30, 1986. They included: date of service, national group code (type of visit), diagnostic code, physician number, block of practice, group code, cost of service, and number of services performed. In-patient hospital claims data were obtained for the same time period and included: date of admission, date of discharge, the total number of

days stayed, diagnostic codes, surgical procedures performed, hospital number, physician number, block of practice, and separation code.

To assess objective 2, data were obtained from the personal care home files for all admissions to the province's (excluding the Norman region) personal care homes as of January 1, 1982 as well as for all current residents regardless of their date of admission. The information obtained included the name of the personal care home, the surname of the individual resident, their date of birth, gender, date of first assessment, level of care at first assessment, date of first admission, level of care at first admission, date of separation, and separation code. These data were linked with data supplied by the administrators of the province's personal care homes on all admissions as of January 1, 1982 and current residents of their facilities. They were asked to supply information concerning the name of the resident, their date of admission, and previous place of residence. Of the 108 personal care homes contacted, information was obtained from 99 (92%).

Sample Characteristics

Selected characteristics of the sample as a whole (N = 600) are shown in Table 2. Less than a quarter (19%) are under 70 years of age. The remainder are almost evenly divided between 70 and 79 years of age (39%) and 80 years of age and over (43%). Almost two-thirds (66%) of the sample is female, one-third (34%) male. The vast majority of the respondents are widowed (56%) or married (27%). Just under one-half (45%) worked in semi-skilled, unskilled or farming occupations and less than one-third (32%) were homemakers. Most (85%) attained more than four years of formal education, but more than half (56%) had less than nine years. Almost three-quarters of the sample (73%) reported

Table 2
Sample Characteristics

Characteristic	Total* N	Total* %	Winnipeg N	Winnipeg %	Non-Winnipeg N	Non-Winnipeg %
Age						
60-69	111	18	70	23	41	14
70-79	233	39	108	36	125	42
80 or over	255	43	122	41	133	45
	599	100	300	100	300	100
$\chi^2 = 9.29$, df=2, $p<.01$						
Major Occupation in Life						
Professional/semi-professional/ management	137	23	87	29	50	17
Semi-skilled/unskilled/farming	271	45	148	49	123	41
Homemaker	189	32	64	21	125	42
	597	100	299	99	298	100
$\chi^2 = 31.99$, df=2, $p<.001$						
Years of Schooling						
0-4	89	15	48	16	41	14
5-8	248	41	96	32	152	51
9 or over	260	44	155	52	105	35
	597	100	299	100	298	100
$\chi^2 = 22.81$, df=2, $p<.001$						
Ethnic Identity						
An ethnic group	194	32	120	40	74	25
No ethnic group	404	68	180	60	224	75
	598	100	300	100	298	100
$\chi^2 = 15.01$, df=1, $p<.001$						
Place of Birth						
Canada	414	69	187	62	227	76
Other country	186	31	113	38	73	24
	600	100	300	100	300	100
$\chi^2 = 11.85$, df=1, $p<.001$						
Religion						
Protestant	382	64	175	58	207	69
Catholic	154	26	74	25	80	27
Other/no preference	64	11	51	17	13	4
	600	101	300	100	300	100
$\chi^2 = 25.48$, df=2, $p<.001$						
Monthly Income						
$\leq$ \$749	392	70	177	66	215	74
$\geq$ \$750	168	30	93	34	75	26
	560	100	270	100	290	100
$\chi^2 = 4.50$, df=1, $p<.05$						

*Differences in sample size are due to missing values
Only signficant differences are shown here. No signficant differences were evident for gender, marital status, or language.

English as the language they spoke best. Similarly, most (69%) were born in Canada and reported a Protestant (64%) religious affiliation.

Winnipeg/Non-Winnipeg comparisons are also shown in Table 2. There are no significant differences with regard to gender, language of communication, or marital status. However, Winnipeg and non-Winnipeg respondents do differ in terms of age, place of birth, ethnic identification, religious preference, education, major life occupation, and income. Those living in Winnipeg are more likely to be younger (in the 60-69 age group), to have been born in another country, not to be identified with a particular ethnic group, not to have Protestant or Catholic religious preference, to have higher levels of education, to be employed in higher status, non-homemaker occupations, and to have higher levels of income. These are important differences to be taken into account in later analyses.

Respondents living within the four different settings were compared on all of the socio-demographic characteristics. Recall the samples were matched on age. There are no significant differences in age among the groups, confirming the matching was conducted appropriately. Nor are there significant differences with regard to such factors as place of birth, ethnic identification, language of communication, and years of formal education.

Significant differences between the settings are shown in Table 3. The residential groupings differ in terms of gender, marital status, religious preference, major life occupation, and income. While the majority of respondents living in their own homes in the community are male, the majority of those residing in EPH(NS), EPH(S), and MLC facilities are female. As a consequence, community respondents are also more likely to be married, to have been employed in higher status, non-homemaker occupations, and to have higher

Table 3
Sample Characteristics by Housing Type

Characteristic	Community* N	Community* %	EPH-No Services N	EPH-No Services %	EPH-Services N	EPH-Services %	Multi-level Care N	Multi-level Care %
Gender								
Male	88	59	41	27	39	26	36	24
Female	62	41	109	73	111	74	114	76
	150	100	150	100	150	100	150	100
$\chi^2 = 54.60$, df=3, p<.001								
Marital Status								
Single/separated/ divorced	12	8	26	17	30	20	32	21
Married	94	63	16	11	28	19	24	16
Widowed	44	29	108	72	91	61	94	63
	150	100	150	100	149	100	150	100
$\chi^2 = 133.24$, df=6, p<.001								
Major Occupation in Life								
Professional/semi-prof/ management	50	33	25	17	27	18	35	24
Semi-skilled/unskilled/ farming	67	45	68	45	67	45	69	46
Homemaker	33	22	57	38	54	37	45	30
	150	100	150	100	148	100	149	100
$\chi^2 = 18.64$, df=6, p<.01								
Religion								
Protestant	87	58	83	55	101	67	111	74
Catholic	44	29	50	33	32	21	28	19
Other/no preference	19	13	17	11	17	11	11	7
	150	100	150	99	150	99	150	100
$\chi^2 = 15.66$, df=6, p<.05								
Monthly Income								
≤ $749	77	57	113	79	110	78	92	66
≥ $750	59	43	30	21	31	22	48	34
	136	100	143	100	141	100	140	100
$\chi^2 = 22.68$, df=3, p<.001								

*Differences in sample size are due to missing values

levels of income. Those living in supportive housing with services or in multi-level care facilities are more likely to be Protestant than are either of the other two groups. In other words, similarities characterize the individuals residing in the three different types of seniors' housing - EPH(NS), EPH(S), and MLC. These individuals, however, tend to differ in important respects from those living in their own homes in the community.

FINDINGS *

Objective 1

Mean values (i.e., arithmetic means) for residents in each of the four settings are shown in each table. Analysis of variance, a multivariate technique which allows several variables to be controlled at one time, as used to assess Objective #1. For all analyses, the following control variables are used: gender, marital status, region (Winnipeg/non-Winnipeg), income, religion, ability to satisfy needs, functional ability, number of chronic conditions, and perceived health. Because the samples are matched on age, this variable need not be introduced as a control variable; it is, in effect, already controlled for. All tables report only those variables from the above list which are significantly related to the variable of interest. If the variable does not appear in the table, it did not emerge as a significant factor in the analysis. When more than one factor emerges as significant, each factor is related to the dependent variable in addition to and independent of all other factors. Interaction effects between two variables are also noted. Further, the multivariate analyses are reported in tabular form only when housing setting is a significant factor.

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* Direct queries for objectives 1 and 2 to Dr. Chappell and for objective 3 to Dr. Horne.

a) Independence

The issue of independence is addressed in terms of both (a) the importance attributed to it by the respondents; and (b) the perceived capacity for autonomous action available within their actual life situations. Respondents were asked to indicate how important it was to them to be able to decide on their own what their daily activities would be and to be able to find privacy from others. For both areas, they were asked to indicate how often, in their actual life situations, they were able to realize such preferences. Because health and informal support can also be indicators of independence, functional disability and amount of informal assistance received with regard to basic and instrumental activities of daily living are also examined.

For the sample as a whole, the vast majority of respondents (84%) consider the ability to make decisions regarding their daily activities as important or very important. Similarly, most (81%) regard the ability to find privacy from others as important or very important. In terms of their actual life situations, most feel they are usually or always capable of achieving these goals. Indeed over 90% of the respondents surveyed feel they are usually or always able to make such decisions.

In terms of functional disability, just under half (47%) report no limitations in their ability to carry on various activities of daily living. Perhaps as a result, relatively few (21%) report receiving any assistance with such activities as walking, dressing, eating, washing, bathing or grooming, using the toilet, or going out of doors. Somewhat more frequently, assistance is reported for instrumental service activities such as housekeeping, household maintenance, transportation, meal preparation, grocery shopping, or

the management of personal business affairs. Overall, 62% received assistance in one or more of these areas.

Comparing residents of the four different settings on disability and informal assistance fails to reveal any significant differences. In terms of limitations on independence which are imposed by functional disabilities and the need to rely on informal service providers, these data fail to confirm any major differences among the groups.

Differences do emerge, however, with respect to the importance assigned to privacy and to autonomy in decision-making regarding daily activities as well as the perceived ability of residents to make decisions in these areas of their lives (see Table 4). Community residents accord privacy less importance than do those in each of the three other settings. Those with worse functional ability, and men who perceive their income to be inadequate to meet their needs (that is, an interaction effect between gender and perceived income) are also more likely to assign privacy less importance. The differences between the settings are not significant for ability to secure privacy.

Residents of EPH(NS) who have higher incomes attach greater importance to autonomy in making decisions than any other residents. Those with better functioning and women with a perception that their income is adequate also assign it greater importance. However community residents believe they have less ability to make autonomous decisions than do those in other settings. In addition, those in worse health, those who are married, and those with lower perceived health also tend to see themselves with less ability in this area.

All three types of seniors' housing, but most especially EPHs with and without services, do provide a sense of privacy without infringing on the

Table 4
Feelings of Independence

A) Means ($\bar{x}$)	Housing Type*			
	COMM	EPH(NS)	EPH(S)	MLC
Importance of privacy	3.88	4.38	4.28	4.16
Ability to secure privacy	4.42	4.77	4.62	4.75
Importance of decisions about daily activities	4.23	4.37	4.44	4.21
Ability to make decisions about daily activities	4.42	4.71	4.66	4.54

B) Analysis of variance**	Variables	Mean^2	F	p
Importance of privacy	Housing setting	6.20	9.29	<.001
	Functional ability	9.39	14.07	<.001
	Gender x perceived ability of income to meet needs	2.58	3.97	<.05
Importance of decisions about daily activities	Functional ability	17.33	28.78	<.001
	Housing setting x income	2.21	3.67	<.01
	Gender x perceived ability of income to meet needs	3.00	4.98	<.05
Ability to make decisions about daily activities	Housing setting	1.12	3.56	<.05
	Marital status	2.04	6.50	<.01
	Functional ability	13.43	42.78	<.001
	Perceived health	2.02	6.43	<.01

*COMM - Individuals living in their own homes in the community
EPH(NS) - Individuals living in elderly persons housing - no services
EPH(S) - Individuals living in elderly persons housing - services
MLC - Individuals living in multi-level care facilities

**Only significant findings are shown.

individual's sense of autonomous decision-making. Community living can be related to feeling less able to make autonomous decisions. Other factors, notably functional disability, believing one's income is inadequate, and being married are also related to assigning less importance to and believing there is less opportunity to obtain privacy and autonomy in decision-making. For one of the four items examined, these factors override the importance of setting, for the other three items they contribute together with setting to explain feelings of independence.

b) Feelings of Security

To assess feelings of security, respondents were asked how important they considered the following: to know that someone is close by who could be called on in case of an emergency; to live in a secure residence, safe from burglaries or other unwanted intrusions; and to be able to receive medical care when needed. They were then asked to indicate the extent to which they felt these needs were being met in their actual life situations.

As might be expected, the majority of the respondents surveyed regard each aspect of security as either important or very important. Knowing that someone is available in the case of emergency is of importance to 94%; to live in a secure residence to 94%; and to receive medical care when needed to 97% of the respondents. Similarly, most feel that, usually or always, someone would be available in the case of an emergency (96%), their residence is secure (95%), and medical care would be available if needed (94%). That is, almost everyone believes security is important and almost everyone feels secure in these respects.

Given the high level of importance assigned to elements of security by the sample as a whole, it is not surprising to find few differences among

residents of the different housing types. The only significant difference in assigned importance to emerge is that attributed to the security of one's residence by those living in EPH(NS) and those living in their own homes in the community. Those living in EPH(NS) attribute somewhat greater importance to needs for residential security than do those in their own homes.

Although very similar to the importance attributed to needs for security, residents differ by setting when it comes to perceptions of the extent to which security is actually available (see Table 5). Those living in EPH(S) or in MLC facilities are more likely to feel that someone is close by in the event of an emergency than are those in EPH(NS) or in the community. In addition, non-Winnipeg residents, widowed persons, and those with a Protestant religious preference are more likely to feel someone is close by in the event of an emergency.

The tendency for those in MLC's to feel more secure is further evident in response to questions concerning the security of their residences from burglaries or other intrusions where they emerge as distinctive from those in all other settings. Non-Winnipeg residents, especially MLC residents living outside of Winnipeg, are most likely to feel their residences are secure.

Similar differences characterize the housing types with regard to the perceived availability of medical care. Those residing in MLC facilities are significantly more likely to view such care as available than are those in any of the other settings. Once again, it is not only housing type but geographic location that is related to significant differences on this factor. Non-Winnipeg residents are more likely to perceive medical care as being available to them than are Winnipeg residents.

Table 5
Feelings of Security

A) Means ($\bar{x}$)	Housing Type*			
	COMM	EPH(NS)	EPH(S)	MLC
Ability to have someone close by in an emergency	4.60	4.51	4.73	4.86
Ability to have residence secure	4.60	4.59	4.58	4.81
Ability to have medical care available	4.64	4.51	4.67	4.83

B) Analysis of variance**	Variables	Mean^2	F	p
Ability to have someone close by in an emergency	Housing setting	3.22	8.87	<.001
	Region	3.63	10.11	<.01
	Religious preference	1.12	3.11	<.05
	Marital status	2.46	6.85	<.001
	Housing setting x marital status	1.29	3.59	<.01
	Region x marital status	1.35	3.76	<.05
	Religious preference x marital status	1.04	2.89	<.05
	Religious preference x income	2.14	5.97	<.01
Ability to have residence secure	Housing setting	1.37	3.65	<.01
	Region	6.41	17.10	<.001
	Housing setting x region	1.19	3.17	<.05
	Housing setting x income	1.21	3.23	<.05
	Region x marital status	1.33	3.56	<.05
Ability to have medical care available	Housing setting	2.04	5.18	<.01
	Region	9.05	22.98	<.001
	Housing setting x perceived ability of income to meet needs	1.63	4.15	<.01
	Region x perceived ability of income to meet needs	1.53	3.90	<.05

* See Table 4

** See Table 4

In sum, residents of MLC facilities tend to have greater feelings of security than do the residents of the other three housing types. In addition to and independent from housing type, individuals living outside of Winnipeg also have an increased feeling of security when compared with Winnipeg residents.

c) Social Integration

In order to examine social integration, respondents were asked about the number of people in the household, number of children, siblings, other relatives, friends, neighbours, and individuals representing management. The size of the total social network was calculated as was the frequency of interaction with the social network. These data are self-reports of the individual's involvement with others.

Not unexpectedly, people residing in multi-level care facilities tend to report more people representing management than do people residing in either EPH(NS) or EPH(S). In addition, female residents of EPH(S) and Protestant residents of EPH(S) report a greater number of people representing management than do other individu s (see Table 6).

In terms of other social network measures, individuals living in their own homes in the community live with more people than do those in any of the other settings. Not surprisingly, it is married individuals who report living with more individuals in the same household. Furthermore, it is male elderly persons living in the community, regardless of whether it is inside or outside of Winnipeg, and regardless of monthly income who have more household members. Among those with children, there are no differences between the settings in the frequency of interaction with children. However, there is an interaction effect between setting and marital status. Married persons living in the

Table 6
Social Integration

A) Means ($\bar{x}$)	Housing Type* COMM	EPH(NS)	EPH(S)	MLC
Number of people representing management	-	1.71	1.86	3.16
Number of people in the household	.84	.11	.18	.17
Interaction with children	2.17	2.43	1.79	1.84
Interaction with friends	2.67	3.34	3.11	3.02
Interaction with neighbours	3.81	4.09	4.21	4.27
Interaction with total social network	2.86	3.50	3.52	3.46

B) Analysis of variance**	Variables	Mean^2	F	p
Number of people representing management	Housing setting	87.65	35.13	<.001
	Housing setting x gender	14.55	5.83	<.01
	Housing setting x religious preference	6.41	2.57	<.05
Number of people in the household	Housing setting	1.37	17.76	<.001
	Marital status	26.49	343.89	<.001
	Housing setting x marital status	.19	2.43	<.05
	Gender x region	.35	4.54	<.05
Interaction with children	Region	14.80	13.09	<.001
	Housing setting x marital status	2.63	2.32	<.05
Interaction with friends	Housing setting	9.08	3.69	<.05
	Region	44.98	19.21	<.001
	Marital status	15.17	6.48	<.01
Interaction with total social network	Housing setting	12.10	30.08	<.001

*See Table 4

**See Table 4

community tend to have more interaction with their children than do others. Those living in Winnipeg also tend to have more interaction with their children than do those from outside of Winnipeg.

When looking at the frequency of interaction with friends and with neighbours, those living in their own homes in the community tend to see their friends and their neighbours less often than do individuals living in the other settings. It is also those who are widowed compared to non-widowed and persons living outside of Winnipeg compared to Winnipeg residents who report a greater frequency of interaction with friends. Although there are no differences by setting, elderly persons living in Winnipeg report greater interaction with neighbours than elderly persons living outside of Winnipeg. These rural/urban differences in reports of interaction with friends and neighbours may be reflecting differences in how people view and classify their interactions with others. That is, someone living next door may be a friend in a rural area but a neighbour in the city. Interaction with all network members assumes an individual interacts with household members daily. Even though individuals living in the community are more likely to live with someone else, they tend to have significantly less interaction with others overall, than do persons living in any of the other settings.

In sum, these measures of social integration suggest residents of seniors' housing, whether EPH(NS), EPH(S), or MLC, have more interaction with others than do the community living elderly. There is therefore no support for an argument of greater isolation among individuals within these facilities. To the contrary, residents of these facilities have greater interaction with others.

d) Extent of External Relations

The extent of external relations includes participation in recreational activities both internal and external to the individual's housing arrangement. These activities include: watching television; reading/listening to music; visiting/talking/telephone; playing cards/bingo; outdoor yard work; shopping/browsing/window shopping; courses; church services; dining out; sports; and travel. The number of people seen for specific purposes (i.e., instrumental relations such as shopkeepers, bus drivers, etc.) was also included.

Among the eleven areas of recreational activities about which the respondents were asked, three show significant differences between the settings in terms of engaging in the activity internal to the facility or their own home. Only one shows significant differences between the settings for activities engaged in external to the facility or home (see Table 7). Looking at external activities first, those living in EPH(NS) are the least likely to go shopping. Those living in multi-level care facilities are the most likely to engage in shopping. Furthermore, not surprisingly, non-Winnipeg residents, those with good functioning, and those with more money are more likely to do more shopping.

More differences emerge for recreational activities engaged in within the setting. Not surprisingly the elderly living in the community are least likely to attend church services at their own home, to dine in their own home (meaning special dining rather than everyday eating), or to visit with family and friends in their own home. Interestingly, those with more money dine in more. Non-Winnipegers and those who are Catholic are more likely to attend church services internally. In addition, women, non-Winnipegers, Protestants,

Table 7
Extent of External Relations

A) Means ($\bar{x}$)	Housing Type*			
	COMM	EPH(NS)	EPH(S)	MLC
External Recreational Activities				
Shopping	2.33	2.11	2.23	2.35
Courses	1.08	1.04	1.03	1.11
Internal Recreational Activities				
Reading	2.54	2.63	2.55	2.73
Visiting family/friends	2.37	2.43	2.49	2.64
Church services	1.08	1.44	1.39	1.80
Dining	1.05	1.31	1.23	1.41

B) Analysis of variance**	Variables	Mean^2	F	p
External Recreational Activities				
Shopping	Housing setting	1.19	2.95	<.05
	Region	6.48	16.14	<.001
	Income	2.93	7.30	<.01
	Functional ability	69.03	172.04	<.001
	Perceived health	1.58	3.93	<.05
	Housing setting x gender	1.35	3.36	<.05
	Gender x region	2.76	6.86	<.01
Internal Recreational Activities				
Visiting family/friends	Housing setting	1.02	3.26	<.05
	Gender	4.34	13.85	<.001
	Region	5.38	17.17	<.001
	Functional ability	3.63	10.42	<.001
	Gender x region	2.19	6.97	<.01
	Gender x marital status	1.02	3.25	<.05
	Marital status x perceived ability of income to meet needs	1.35	4.26	<.05
Church services	Housing setting	10.78	23.22	<.001
	Region	3.27	7.04	<.01
	Religious preference	3.37	7.26	<.001
	Housing setting x religious preference	1.22	2.62	<.05
	Gender x marital status	1.59	3.44	<.05
Dining	Housing setting	2.90	10.36	<.001
	Income	1.26	4.52	<.05

*See Table 4

**See Table 4

and those with good functioning are more likely to visit with family and friends in their own residence.

These findings strongly support the hypothesis of lack of differences between the settings in terms of internal and external activities. They do not support any claim that those who live in elderly persons' housing tend to become inward directed in their activities and correspondingly, cut off or decrease their activities external to the location.

e) Use of Services

The utilization of formal services as reported by the respondents was examined in terms of both the overall number of services used and individual services used. The formal services examined include: visits from a nurse; exercises/physiotherapy; bath help/shampoo; medication supervised by a health care professional; OT/PT services; foot care; visit by an orderly; equipment; visit by a social worker; homemaker-household tasks; homemaker/personal care; meal preparation; meals-on-wheels; companion; regular drop-in visitors or daily hello; adult day care; social relief; transportation; handyman services; housing counselling; care planning; entertainment/recreation; congregate meals; shopping facilities; emergency clinic; day hospital; dentist; chiropractor; chiropodist; pharmacist; optician; nutritionist; public health nurse; minister/priest/rabbi; psychologist; senior centre; fitness program; community health clinic; and lawyer.

Examination of the overall number of formal services used shows that those living in the community report using fewer services than do those in any of the three types of seniors' housing (see Table 8), despite similar levels of functioning among the residents of the different settings (see p.1). As

Table 8
Use of Services

A) Means ($\bar{x}$)	Housing Type*			
	COMM	EPH(NS)	EPH(S)	MLC
Overall number of services	2.64	3.40	3.61	4.36
Housing counselling	1.00	1.10	1.15	1.19
Entertainment/recreational activities	1.07	1.33	1.31	1.42
Congregate meals	1.07	1.25	1.41	1.44
Services of a minister	1.13	1.23	1.21	1.33
Equipment	1.25	1.03	1.16	1.13
Homemaker/household tasks	1.63	1.39	1.58	1.53
Meal preparation	1.16	1.06	1.05	1.02
Handyman services	1.23	1.02	1.00	1.01

B) Analysis of variance**	Variables	Mean[2]	F	p
Overall number of services	Housing setting	36.78	6.52	<.001
	Region	69.96	12.40	<.001
	Marital status	19.99	3.54	<.05
	Functional ability	624.15	110.59	<.001
	Chronic conditions	109.34	19.37	<.001
Entertainment/recreational activities	Housing setting	.67	3.16	<.05
	Region	1.15	5.45	<.05
	Functional ability	.96	4.56	<.05
	Perceived health	.99	4.70	<.05
Congregate meals	Housing setting	1.26	6.42	<.001
	Perceived ability of income to meet needs	1.46	7.42	<.01
	Region x marital status	.75	3.79	<.05
Equipment	Housing setting	.46	5.73	<.001
	Functional ability	6.08	74.87	<.001
	Housing setting x region	.23	2.84	<.05
	Housing setting x perceived ability of income to meet needs	.23	2.78	<.05
Homemaker/household tasks	Housing setting	.71	3.38	<.05
	Functional ability	5.00	23.89	<.001
	Chronic conditions	.74	3.56	<.05
	Perceived health	1.09	5.22	<.05
Meal preparation	Housing setting	.16	3.35	<.05
	Gender	.32	6.49	<.01
	Functional ability	1.05	21.33	<.001
	Gender x region	.23	4.74	<.05
	Region x perceived ability of income to meet needs	.19	3.97	<.05
	Marital status x income			
Handyman services	Housing setting	.50	14.17	<.001
	Housing setting x region	.11	2.97	<.05
	Housing setting x perceived ability of income to meet needs	.11	3.13	<.05

*See Table 4

**See Table 4

well, Winnipeg residents, those with better functioning, those with fewer chronic conditions, and those who are married tend to use fewer services.

Comparisons of the utilization of individual services among the four types of housing reveals two categories. Services that may be unique to an elderly persons' housing environment are more likely to be used by individuals living in that setting than by persons living in their own homes in the community. These include entertainment/recreational activities and congregate meals. Individuals more likely to use entertainment/recreational services are Winnipeg residents, individuals with good functioning, and those who perceive their health as good. Regarding the use of congregate meals, individuals who perceive their income as adequate are more likely to use this service.

On the other hand, services that could be considered as necessary to keep an individual in their own home in the community are more likely to be utilized by community residents. That is, community residents are more likely to receive formal assistance with meal preparation than those living in MLC. They are also more likely to be using equipment and homemaker/household services than individuals in EPH(NS). Handyman services are more likely to be used by those living in their own homes than those living in any of the three types of elderly persons' housing. In addition, assistance with meal preparation is more likely to be received by males and elderly persons with poor functioning. Individuals receiving equipment are more likely to have poor functioning and to be community residents in Winnipeg. Handyman services tend to be utilized by community residents living outside Winnipeg and Winnipeg residents who perceive their incomes as inadequate.

Given all of the various services which individuals can receive, a small proportion of them show differences by residential location. Indeed, for

those for which there are differences, there are no surprises. It should be reiterated, however, for those findings where the importance of setting emerges, it does so when controlling for numerous other factors, including health and income.

f) Well-Being

Well-being is viewed broadly to include economic, health, and psychological factors. In this study, it is measured by monthly income, how well income and assets meet needs, number of chronic conditions, number of days in hospital during the past year, number of days spent in bed during the last year, perceived health, happiness, overall life satisfaction, and mental status. Comparisons of residents living in the different settings reveal significant differences (see Table 9) on five of the nine measures used: income, perceived ability of income to satisfy needs, number of chronic conditions, happiness, and overall life satisfaction.

Looking at economic well-being first, community residents report more monthly income than those in the other settings. It might be noted that those in multi-level care facilities follow next in terms of income. In addition, men tend to report more monthly income than women and Winnipegers more than non-Winnipegers. Protestants and those with better levels of perceived health also tend to have more perceived income. Setting does not have an independent effect on perceived adequacy of income but does interact with marital status. Married persons living in the community tend to perceive their income as more adequate than others. That is, rent subsidy is not the important aspect of the housing option.

In terms of the health measures, those living in the community report fewer chronic conditions than do those in any of the three types of elderly

Table 9
Well-Being

A) Means ($\bar{x}$)	Housing Type*			
	COMM	EPH(NS)	EPH(S)	MLC
Monthly income	1.43	1.21	1.22	1.34
Perceived ability of income and assets to satisfy needs	4.06	3.79	4.04	4.04
Number of chronic conditions	3.19	4.10	3.77	3.89
Perceived health	2.37	2.59	2.61	2.44
Happiness	5.14	4.95	4.91	5.13
Overall life satisfaction	4.08	3.89	3.91	4.16

B) Analysis of variance**	Variables	Mean[2]	F	p
Monthly income	Housing setting	.69	3.68	<.05
	Gender	3.81	20.39	<.001
	Perceived ability of income to meet needs	2.85	15.22	<.001
	Region	1.19	6.35	<.01
Perceived ability of income and assets to satisfy needs	Religious preference	.82	5.52	<.01
	Income	2.28	15.31	<.001
	Perceived health	1.54	10.38	<.001
	Housing setting x marital status	.34	2.26	<.05
	Religious preference x region	.51	3.40	<.05
Number of chronic conditions	Housing setting	11.41	2.96	<.05
	Income	37.22	9.64	<.01
	Perceived health	497.21	128.75	<.001
Happiness	Housing setting	1.15	5.96	<.001
	Religious preference	1.22	6.31	<.01
	Income	1.97	10.22	<.001
	Perceived ability of income to meet needs	5.34	28.77	<.001
	Functional ability	2.35	12.23	<.001
	Chronic conditions	14.31	74.31	<.001
	Perceived health	1.85	9.61	<.01
	Gender x marital status	1.43	7.45	<.001
	Region x marital status	1.05	5.46	<.01
	Region x income	.90	4.66	<.05
Overall life satisfaction	Housing setting	1.53	3.04	<.05
	Religious preference	3.21	6.38	<.01
	Perceived ability of income to meet needs	3.84	7.62	<.01
	Chronic conditions	22.15	43.99	<.001
	Perceived health	6.80	13.51	<.001
	Housing setting x perceived ability of income to meet needs	1.47	2.92	<.05
	Gender x marital status	4.11	8.16	<.001
	Religious preference x marital status	2.97	5.90	<.001

*See Table 4
** See Table 4

persons' housing. Among those in the different types of elderly persons' housing, those in EPH(NS) have the highest number. In addition, those with less money have more chronic conditions and accurately perceive their health to be worse. Residents of the different settings do not differ significantly on any other health dimensions.

In terms of overall well-being, measured here as global happiness and overall life satisfaction, both those living in the community and in multi-level care facilities emerge as the happiest and most satisfied with life. Those living in EPH(NS) and EPH(S) are less happy. In addition, a higher level of income, higher perceived income, fewer chronic conditions, better perceived health, good functioning, and Protestant religious affiliation are all related to a greater likelihood of expressing greater happiness. These same factors are related to expressing high or overall satisfaction with life.

In sum, community living elderly have better economic (in terms of having more money) and overall well-being (as measured using overall indicators) than residents of elderly persons' housing, whether EPH(NS) or EPH(S). Interestingly, the residents of multi-level care facilities, while being disadvantaged economically and in health compared with the community dwelling residents, nevertheless report similar levels of happiness and life satisfaction, perhaps in recognition of their need for specialized facilities. To determine whether this is due to the greater feelings of security and social integration apparent in such settings (as discussed earlier), additional analyses were run including the feelings of security measures and importance of autonomy, which showed significant differences between the settings earlier. The results show that feelings of security and autonomy do indeed contribute significantly to feelings of happiness and life satisfaction

but do so in addition to and independent of the effect of setting. Housing setting in itself contributes to overall well-being.

g) Reasons for Moving

Respondents living in their current place of residence for less than 20 years were asked their reasons for moving. These reasons included: to be more independent or on one's own; better shopping facilities; better health care facilities; improved housing quality; less comfort or security at previous residence; less ability to manage at previous residence; to be near family and friends; because of social activities; needed help/assistance but could not obtain it where they were; affordable rent; meal/meal programs; and to be nearer to people their own age. In the sample as a whole, the majority have moved sometime during the last 20 years (497 or 83%). All but two of the non-movers are from the sample of individuals living in their own homes in the community.

Moving for access to a meal program is not applicable to the community living sample. Among those in seniors' housing, those attached to multi-level care facilities are more likely to have moved for this reason (see Table 10). In addition, those in the community are least likely to have moved because of rent, not surprising given that EPHs tend to be income subsidized. They are also the least likely to have moved for better leisure facilities or less comfort or security at the previous residence. They are the least likely, along with those in EPH(S) to have moved to be near better health care facilities. Those in multi-level care facilities were the most likely, not surprisingly, to have moved for this latter reason. Those in EPH(NS) and EPH(S) are the most likely to have moved for affordable rent. None of these findings are surprising and suggest that the system is working as planned.

Table 10
Reasons for Moving

A) Means ($\bar{x}$)	Housing Type*			
	COMM	EPH(NS)	EPH(S)	MLC
Because of meals/meal programs	-	1.03	1.05	1.11
Affordable rent	1.16	1.40	1.44	1.29
Better health care facilities	1.16	1.20	1.13	1.40
To be more independent or on own	1.20	1.36	1.37	1.24
Better leisure facilities	1.06	1.22	1.20	1.20
Less comfort or security at previous residence	1.22	1.49	1.41	1.40

B) Analysis of variance**	Variables	Mean^2	F	p
Because of meals/meal programs	Housing setting	.26	4.37	<.01
	Functional ability	1.51	25.53	<.001
	Housing setting x income	.19	3.21	<.05
Affordable rent	Housing setting	.81	3.59	<.05
	Region	1.00	4.45	<.05
	Income	1.66	7.40	<.01
	Housing setting x region	.75	3.35	<.05
Better health care facilities	Housing setting	2.06	12.28	<.001
	Region	.82	4.87	<.05
	Housing setting x perceived ability of income to meet needs	.51	3.05	<.05
Better leisure facilities	Region	1.14	7.73	<.01
	Housing setting x region	.33	2.23	<.05
Less comfort or security at previous residence	Housing setting	.71	3.01	<.05
	Housing setting x region	.86	3.65	<.01

*See Table 4

**See Table 4

The few differences evident between the three types of seniors' housing suggest that there are few differences in reality between these places.

Respondents were not specifically asked for their reasons for remaining in their current locations. However, they were asked about: their preferences for another type of living arrangement, other choices available at the time of the move, the likelihood of remaining at their current residence during the next year, their familiarity with the area before moving, how 'at home' they felt in the area since moving, and their preferences for another area/neighbourhood/town.

Comparisons of the residents across settings reveal few significant differences on these indicators. Community residents are more likely to have had an alternate choice at the time of moving (48% of those who moved) than are those in any of the other three housing types and this choice was most often another home/apartment in the community. These residents also felt that the likelihood of their remaining at their current residence was greater than did those in either EPH(NS), EPH(S), or MLC facilities (Gamma = -.31). There were no significant differences on any of the other indicators.

Conclusions to Objective 1

In terms of independence, these data suggest that elderly persons in seniors' housing, but most especially elderly persons' housing with and without services, do provide a sense of privacy without infringing on the individual's sense of autonomous decision-making. Community living can be related to feeling less able to engage in autonomous decision-making. Other factors, notably functional disability, believing one's income is inadequate, and being married are also related to assigning less importance to and believing there is less opportunity to obtain privacy and autonomy in

decision-making. For one of the four indicators examined, these factors override the importance of the setting. For the remaining three items they contribute together with setting to explain feelings of independence among those studied.

In terms of feelings of security, whether in terms of having someone close by in an emergency, having the residence secure, or having medical care available if needed, the seniors' housing types all emerge as more secure than living in the community. However among the different types of housing studied, multi-level care facility residents feel most secure of all. In addition, individuals living outside of Winnipeg have a greater sense of security than do urban residents.

There is no support for the argument of greater isolation within seniors' housing. To the contrary, the data here suggest that residents in these facilities have greater interaction with others.

Recreational activities were examined separately for those engaged in internal to the housing arrangements and those engaged in external to the housing arrangement. The lack of differences between the settings in terms of recreational activities engaged in externally suggests that individuals in any of the types of seniors' housing examined here do not cut off external ties and engage only inwardly. While more differences appear between the settings in terms of activities conducted internally, the findings do not support claims that those who live in elderly persons' housing tend to become inward directed in their activities and correspondingly cut off from activities external to the location.

In terms of the utilization of formal services, those in seniors' housing use more of those services that are unique to them, such as congregate meals

and particular types of entertainment and recreation. However those living in the community use services that are more particular for that setting, such as homemaker/household tasks and handyman services.

The community living elderly have better economic, health, and general psychological well-being than residents of the other settings. Interestingly, however, residents of multi-level care facilities, while being disadvantaged both economically and in health compared with the community dwelling residents, nevertheless report similar levels of happiness and life satisfaction.

Respondents who have lived in their current place of residence less than 20 years were examined in terms of their reason for moving. The findings suggest that individuals are moving into available types of housing for the reasons originally intended. Those moving into EPHs are more likely to do so for economic reasons and those moving into MLC facilities are more likely to do so to be near better health facilities. There are few differences between the types of seniors' housing, suggesting that there are few differences in reality among these places.

Objective 2

a) Funnelling

As mentioned earlier, arguments are numerous concerning both the advantages and disadvantages of multi-level care facilities. One such argument is that the availability of multiple levels of service within one facility will eliminate the need to relocate to alternative housing arrangements and allow maintenance of existing interpersonal relations as individuals decline in functioning (Stephens et al., 1986). However, concerns have arisen that: (1) multi-level care facilities will accept residents into

their higher levels of care from their own internal lower level of care sections rather than those external to the facility; and (2) individuals will enter the lower level of care within a multi-level care facility in order to guarantee placement in the higher levels of care.

To assess the first concern, i.e. the 'funnelling' hypothesis, personal care home data from the Manitoba Health Services Commission were obtained for all individuals currently residing in or having resided in a personal care home over the last five years (January 1, 1982 through to December 31, 1986 inclusive). These data included: name of the personal care home, name of the individual, date of admission, gender, level of care at admission, separation date, separation code, where separated to, date of first assessment, level of care at first assessment, municipality code of individual before entry into personal care home, and date of birth. Data on place of residence prior to entry into a personal care home came from the personal care home administrators. These data were categorized into: (1) own home/apartment or home of another person; (2) elderly persons' housing unit/guest home/multi-level care facility different from the personal care home currently residing in; (3) housing section within the personal care home currently residing in; and (4) hospital or a different personal care home.

Admissions to the personal care homes were divided into three categories: admissions to multi-level care facilities joint managed, and juxtaposed, and admissions to all other personal care homes. In total there were 11,471 admissions to personal care homes during the period examined. Of these, 2,305 (20%) were to multi-level care facilities and 9,166 (80%) were to non multi-level care facilities.

Information on previous place of residence was available for 77% of admissions to multi-level care facilities and for 58% of those living in non multi-level care facilities. In all instances, the majority of individuals lived in their own home, apartment, or the home of another person before entry into a personal care home. This was the case irrespective of whether that was a juxtaposed MLC, joint managed MLC personal care home or freestanding personal care home (54%, 65%, and 55%, respectively) (see Table 11). Twelve percent of admissions to multi-level care facilities over the last 5 years came from the housing section of that same facility, with slightly more in the juxtaposed facilities (13%) than in the joint managed facilities (8%). The greatest difference appeared for those admitting individuals from a hospital or from a different personal care home. Freestanding personal care homes were much more likely to admit patients directly from hospital or another personal care home. That is, these findings indicate that multi-level care facilities (of either type) do indeed admit individuals living in their lowest level of care section, but this group comprises a small percentage of their total population.

To help assess whether the figure of 12% for admissions to MLC personal care homes is high or low, age, gender, level of care at assessment, level of care at admission, length of time between assessment and admission, and a profit or non-profit variable were introduced into the analyses (Table 11b). A slightly higher proportion of individuals in juxtaposed compared with joint managed personal care homes who come from that facility are older (age 70 and over). They are, however, just as likely to be male as female.

Comparison of type of personal care home by level of care at assessment and level of care at admission, shows that half of the individuals are

Table 11

Comparison of Multi-level Care Facilities and Freestanding Personal Care Homes

	Juxta MLC N	Juxta MLC %	Joint MLC N	Joint MLC %	Freestanding N	Freestanding %
a) Previous place of residence						
own home or home of other person	797	54	193	65	2885	55
EPH/guest home/MLC different from PCH currently residing in	224	15	52	18	805	15
Housing section of PCH currently residing in	191	13	25	8	-	-
Hospital or different PCH	267	18	27	9	1588	30
	1479	100	297	100	5278	100

b) Previous place of residence by type of personal care home by age (Percent)

	≤ 69			70-79			80 or over		
	Juxta	Joint	Free	Juxta	Joint	Free	Juxta	Joint	Free
own home or home of other person	56	63	42	57	76	55	53	62	57
EPH/guest home/MLC different from PCH currently residing in	10	7	12	13	16	13	16	19	17
Housing section of PCH currently residing in	7	7	-	8	4	-	17	11	-
Hospital/different PCH	27	22	46	22	4	32	14	9	25
	100	99	100	100	100	100	100	101	99

c) Previous place of residence by type of personal care home by gender (Percent)

	Male			Female		
	Juxta	Joint	Free	Juxta	Joint	Free
own home or home of other person	62	71	57	49	62	53
EPH/guest home/MLC different from PCH currently residing in	10	14	12	18	19	17
Housing section of PCH currently residing in	11	7	-	14	9	-
Hospital/different PCH	17	7	31	19	10	29
	100	99	100	100	100	99

Cont'd....

Table 11 - Continued

d) Previous place of residence by Level of Care at 1st Assessment

Previous place of residence	Level 1 N	Level 1 %	Level 2 N	Level 2 %	Level 3 N	Level 3 %	Level 4 N	Level 4 %
own home or home of other person	976	56	2035	55	742	54	121	52
EPH/guest home/MLC different from PCH currently residing in	259	15	682	18	130	9	10	4
Housing section of PCH currently residing in	76	4	116	3	22	2	2	1
Hospital/Different PCH	426	24	875	23	481	35	100	43
	1737	99	3708	99	1375	100	233	100

e) Previous place of residence by Level of Care at Admission

Previous place of residence	Level 1 N	Level 1 %	Level 2 N	Level 2 %	Level 3 N	Level 3 %	Level 4 N	Level 4 %
own home or home of other person	878	67	1892	54	951	50	154	45
EPH/guest home/MLC different from PCH currently residing in	227	17	657	19	185	10	12	3
Housing section of PCH currently residing in	62	5	126	4	25	1	3	1
Hospital/Different PCH	142	11	807	23	758	39	175	51
	1309	100	3482	100	1919	100	344	100

assessed at a level 2 and admitted at a level 2. Multi-level care facilities tend to have more level 1 assessments and admissions than do the other personal care homes. However, the relationships between previous place of residence and assessed and admitted levels of care for both types of personal care home shows that those from the housing section of MLC facilities are no more likely to be of lower levels of care (se Table 11d). Those coming from hospital or another personal care home are most likely to be assessed and admitted at Level 3 or Level 4. Freestanding PCHs, especially for-profit ones, are more likely to accept admissions requiring a higher level of care.

Length of time between assessment and admission was pursued further to determine whether those admitting from that facility were admitted faster. This was not the case. However, those with shorter waits (less than or equal to 3 months and 4 to 10 months) tended to come from their own homes in the community compared with those who waited longer (11 months or more). Those waiting 11 months or more tended to come from hospitals or other personal care homes. Those from EPHs tend to fall in-between, they wait a moderate amount of time.

Finally, the non-profit and for profit distinction was taken into account. Since no MLCs are for profit, only the non-profits could be compared. Among non-profit PCHs, those which are freestanding are still the most likely to admit from hospitals and other PCHs although this difference is somewhat reduced.

Although one can debate whether 12% is high or low, little support is evident here for the concern over a tendency of MLC facilities, whether juxtaposed or joint managed, to accept individuals from their own lower levels of care. It can be noted that determination of acceptance into a facility is

not at the exclusive control of the facility. The provincial Continuing Care program influences this process both through their involvement in panelling and the management of the waiting list which involves the setting of priorities for admission. In addition, individuals have a say as to which personal care homes they do or do not wish to live in. The interpretation of the 12% figure as not high, suggests that this system of coordination between the different parties is working. However, there is a clear tendency for freestanding PCHs to accept more individuals from hospitals and other PCHs than is true of MLC facilities. These individuals, in turn, require high levels of care. The reasons for this difference may warrant further study.

b) Premature Entry

To assess the premature entry hypothesis that individuals enter the lower levels of care within a multi-level care facility so as to guarantee placement later on, those living in juxtaposed MLC facilities (N = 76) are compared with those living in jointly owned MLC facilities (N = 74), and with those living in the community on: functional ability, number of chronic conditions, assistance with basic ADL items, assistance with instrumental ADL items, number of primary caregivers, and income.

First, however, those living in juxtaposed facilities were asked directly whether they had moved because of the nursing home next door; 51% said they had not moved because of the nursing home next door; 38% had moved because of the nursing home next door.

Comparing the three groups on the need indicators, significant differences are shown in Table 12. Those living in juxtaposed MLC facilities have worse functioning than individuals in jointly owned MLC facilities. Neither group differs significantly from those living in the community.

Table 12

Characteristics of Individuals Living
in Multi-level Care Housing

	Housing Type*	$\bar{x}$	t	p
a) Functional ability	Joint MLC	1.23	2.32	.05
	Juxta MLC	1.41		
	COMM	1.27		
b) Number of chronic conditions	COMM	3.19	4.10	.01
	Juxta MLC	4.22		
	Joint MLC	3.54		

*Joint MLC - Individuals living in multi-level care facilities which are jointly owned

Juxta MLC - Individuals living in multi-level care facilities which are juxtaposed

COMM - Individuals living in their own homes in the community

Individuals living in juxtaposed MLC facilities report more chronic conditions than those living in the community. Neither group differs significantly from those in joint MLC facilities.

In sum, there are few differences between those living in joint managed and juxtaposed MLC and those living in their own homes in the community. To this extent one could debate whether individuals enter prematurely.

Conclusions to Objective 2

There is little support in this study for concern over a tendency that multi-level care facilities, whether they are juxtaposed or joint managed, accept individuals from their own lower levels of care. There is, however, a clear tendency for freestanding personal care homes to accept more individuals from hospitals and other personal care homes than do multi-level care facilities. Furthermore, these are individuals who require higher levels of care.

In terms of the premature entry hypothesis, there is no support for grouping multi-level care facilities together as different from those living in the community. The few differences which emerge on need indicators suggest that one could debate whether individuals in fact enter prematurely.

Objective 3

As noted in the introduction, the third objective of the study is to analyze the cost of services provided to seniors in the different residential settings. This entails two major components: a comparative cost analysis of existing services as currently provided in the different settings; and an analysis of the estimated cost of providing appropriate services to those eligible, based on need, in the different settings, should the data reveal some individuals not receiving services for which they are eligible.

Costs are analyzed from a "public sector" perspective, with an emphasis on costs directly associated with publicly-funded programs providing support services and health care. The implication of a "public sector" perspective is to exclude consideration (and costing) of various care services informally provided to seniors by relatives, friends, and other volunteers. So restricted, the cost analysis includes a range of services in the personal support and personal health care categories formally provided through the Office of Continuing Care (OCC) and the Manitoba Health Services Commission (MHSC). The analysis also includes various other support services (e.g., congregate meals, shopping assistance, social and recreational programs) provided to seniors under other auspices in certain residential settings, specifically, elderly persons' housing with on-site supportive services and multi-level care facilities (MLCs) where seniors' housing is physically and/or administratively linked to a personal care home (as previously described on pp. 16-17).

Various data on the nature and extent of service utilization in the personal support and personal health care categories were obtained from the interview. These primary data differ from the secondary data obtained from the OCC and the MHSC in four key respects. First, and most obviously, they are self-reports, not administrative records of service use and frequency. Second, they represent recalls of service use and frequency over the six months preceding the interview, and hence relate to a shorter time horizon than the eighteen months spanned by the administrative data. Third, they identify a broader range of services and formal caregivers than are available under the public universal home care and health (hospital and medical) care insurance programs. Fourth, and most importantly, they identify the

organization providing each service and hence capture service use from sources other than those funded under the auspices of the OCC and the MHSC.

The latter feature permits a more complete analysis of "current" (including the six months prior to interview) service use across the residential settings than would be possible on the basis of the secondary data alone. There is an associated limitation in that unit cost data specific to services provided by organizations other than the OCC are not available, hence, it is not possible to measure and model the full range of cost variation across the different settings. However, the opportunity for meaningful analysis remains since the costing of such services may be based on the equivalent unit costs in the formal home care program. While any and all resultant differences in service costs across the residential settings simply reflect the underlying differences in service utilization, such "program-equivalent costs" yield useful information on the costs of hypothetically transferring full responsibility for service provision to the OCC under the assumption that existing patterns of service use remain constant.

Information pertinent to objective 3b - estimating the cost of increasing services to those eligible based on need - was also obtained from the interview. Respondents were queried as to whether they could use any new services and/or an increase in existing services. These self-assessments of "unmet needs" constitute the primary basis for gauging whether there was any "under-provision" of various services (at the point of interview) and, in particular, whether the proportion of residents reporting "unmet need" differed across the residential settings. This proportion may be accepted at face value or, alternatively, adjusted upward or downward for different definitions of "unmet need". For example, measures of functional ability (ADL

and IADL) based on the interview data may be used to define the proportion of "needy" individuals independently of the self-reported "unmet needs". However, apart from such refinements, little more can be done to further quantify "unmet needs" from the interview data. Respondents provided minimal or no information on how many additional services they would like and how frequently they would like to receive them. Hence, there is no basis for precise and valid costing of the service volumes that would have to be provided to eliminate or reduce "unmet needs" among individuals in each of the residential settings. At best, a range of costs can be estimated based on reasonable assumptions concerning the service frequencies necessary to meet the "needs" for specific types of care or assistance.

In pursuing objectives 3a and 3b, several statistical methodologies were used for analyses. This strategy was deemed desirable in order to accommodate the twin realities that many members of the sample experienced little or no use of services over the relevant intervals and, correspondingly, that a minority group of "outliers" received a disproportionately large share of the various services. In such (technically "skewed") circumstances, careful assessment of differences in service use across the residential settings requires a two-stage analysis.

Stage one defines service use as a dichotomous event involving "no use" or "some use" of services, and asks the question "does the proportion of users of service 'x' differ significantly across the residential settings?" Stage two defines service use as a continuous variable taking non-zero positive values, and asks the question "among those who use service 'x', does the level of use differ significantly across the residential settings?" The statistical techniques appropriate to answering these distinctly different questions are

contingency tables (including log linear analysis) and analyses of variance respectively.

While the main effect of residential setting is of interest in all analyses, there is a secondary interest in the geographic dimension since the sample was explicitly structured to include representative Winnipeg and non-Winnipeg sub-samples. Many previous studies of health care use in Manitoba have demonstrated the significance of this geographic dimension, hence its a priori status as a "main effect" in the present study. In addition to these basic housing and region groupings, a number of other socio-demographic and health status variables are included as control variables in multiple (logistic and linear) regression models in order to better isolate the independent effect of housing type on service use and cost.

Cost of Current Services

The findings regarding service use and cost in the different residential settings are presented below in two distinct sub-sections. The first section includes results for home care, medical care and hospital care based on the administrative data obtained from the OCC and the MHSC, while the second section profiles utilization of selected support services from various provider organizations as documented in the interview data.

Findings Based on the OCC and MHSC Data

All results reported in this section are based on the histories of service use and cost for the six months from January 1, 1986 to June 30, 1986 as documented in the various administrative data sets maintained by the OCC and the MHSC. Results specific to the eighteen month histories from January 1, 1985 to June 30, 1986 are reported in Appendix C.

a) Utilization and Cost of Home Care

For the sample as a whole, 16.5% (99/600) received some home care during the six month period to June 30, 1986. In total, 12,360 hours of care were provided at a cost of $78,450. Expressed in terms of the average number of hours of care and associated cost among those members of the sample who received some care over this interval, the figures are 124.9 hours and $792 respectively. Since these latter averages are definitionally sensitive to the inclusion of "outliers" - individuals who received home care much more frequently and/or for longer periods of time than the rest of the sample - it is appropriate to examine the central tendency of both distributions using the median, i.e., the number of hours and associated cost above which and below which fifty percent of home care users are ranked. Based on this more meaningful calculation, the median home care user received 52 hours of service at a cost to the program of $310. These results and corresponding figures for the two dominant components of home care, homemaker services and nursing care, are summarized in Table 13.

The same summary statistics for each of the four residential sub-samples are shown in Table 14. Looking first at the figures in the left-most column, there is apparent variation in the proportion of sub-sample members who used home care and its dominant components, homemaking and nursing services, over the six month interval. In each of the three service categories, seniors who live in their own homes in the community were seemingly least likely to have been in contact with the home care program. Further investigation using multivariate (logistic regression) analyses determined that the observed differential between the COMM sub-sample and the other three sub-samples was insignificant in each of the three service categories. Differences were also

Table 13
Summary Statistics of Home Care
Use and Cost, Jan. 1/86-June 30/86

Service Type	% Users N=600	Service Hours per User*	Service Costs per User*
All	16.5	124.9 (52.0)	$792 (310)
Homemaking	15.2	90.8 (41.0)	536 (259)
Nursing	6.0	36.5 (23.5)	435 (432)

* Unbracketted figures are mean values; bracketted figures are median values.

Table 14

Summary Statistics of Home Care Use and Cost
by Housing Type, January 1/86 - June 30/86

Service Type	Housing Type*	% Users	Service Hours per User**	Service Costs per User**
All	COMM	10.0%	225.5 (182.0)	$1,547 (1,048)
	EPH(NS)	18.7	72.0 (36.5)	585 (227)
	EPH(S)	18.0	90.8 (61.0)	585 (382)
	MLC	19.3	155.5 (49.0)	875 (300)
Home-making	COMM	9.3%	176.1 (101.5)	$1,012 (587)
	EPH(NS)	16.0	72.4 (39.5)	421 (230)
	EPH(S)	17.3	75.0 (46.5)	447 (269)
	MLC	18.0	78.2 (36.0)	475 (209)
Nursing	COMM	4.0%	13.8 (11.5)	$226 (171)
	EPH(NS)	8.0	23.2 (12.0)	308 (190)
	EPH(S)	6.7	27.9 (25.0)	336 (264)
	MLC	5.3	84.4 (40.5)	907 (486)

* See Table 4.

** Unbracketted figures are mean values; bracketted figures are median values.

initially detected in the geographic dimension (suggesting that regardless of housing type non-Winnipeg residents were 1.6 times more likely to receive some home care and 1.7 times more likely to receive some homemaking assistance than Winnipeg residents), but these too were subsequently shown to be insignificant after controlling for other variables. In particular, it was determined that the odds of usage for all three categories of home care was significantly higher among seniors with "some" or "a lot" of functional disability, and significantly lower among those having frequent (at least once per week) contact with relatives and friends. It was also demonstrated that those reporting five or more chronic conditions were 1.7 times more likely to make use of homemaking services than those reporting fewer or no chronic conditions. These results confirm that multi-dimensional "needs" assessments play a major role in determining eligibility for formal home care, independently of housing type or geographic location.

Among users of home care, both mean and median values of service hours and associated costs vary across the housing groups. In the all services category, there is a striking difference between the COMM sub-sample and the other three in both hours and cost per user, as indicated by either the means or medians. The latter fact indicates that the difference is <u>not</u> attributable to the presence of a few "outliers" with atypically high service use and cost. Further investigation using a regression model in which the effects of housing type and region were assessed <u>before</u> entering other control variables confirmed the presence of a significant difference in hours and cost between seniors living in their own homes and those in elderly persons' housing (including MLCs). However, this difference <u>disappeared</u> after controlling for functional ability, as measured by (I)ADL, and a variable measuring the

individual's attitude toward "risk". (The latter was defined to differentiate the "fiercely independent" senior who, regardless of functional disability, would likely refuse formal assistance.) Thus, after appropriate adjustment for (I)ADL and "risk" differences, housing type exerts no independent influence on use and cost of broadly defined home care services.

Results and conclusions identical to the above were also obtained for homemaking services. In particular, the differences in hours and cost of homemaking services across the housing groups reported in Table 14 were shown to be insignificant after controlling for functional ability and "risk". Put another way, seniors similar in both respects who received some homemaking service generated the same profile of hours and cost over the six month interval, regardless of their housing circumstances.

In the nursing services category, the pattern evident in Table 14 is for sharply higher hours and cost per user to be evident in the MLC group than in the other three. This pattern is shared by the means and medians and thus cannot be readily attributed to "outliers". In the multivariate analyses, the elevated levels of nursing hours and costs per user in MLCs were confirmed to be significant before and after controlling for functional ability and "risk" (and the other socio-demographic variables). Thus, for this one service dimension, there is a significant "housing effect" traceable to the multi-level care (MLC) facility. This is a surprising result for which there is no obvious explanation, since the effect is concentrated in rural MLCs that are juxtaposed to a personal care home where seniors are well positioned to receive "in-house" nursing care.

b) Utilization and Cost of Hospital Care

For the sample as a whole (reduced to those who consented to allow access to the MHSC data), 13.1% (69/527) received some in-patient hospital care during the six months ending June 30, 1986. On average, these users were admitted 1.3 times, stayed 9.6 days per admission, and spent a total of 12.6 days in hospital; corresponding median values (desensitized to "outliers") are 1.0, 6.0 and 8.0.

Hospital utilization specific to the four residential settings is summarized in Table 15. Small differences are apparent in the percent of each sub-sample who experienced some hospitalization over the six-month interval, but these are insignificant and due only to chance variation. Systematic differences in the likelihood of hospitalization are detectable in the geographic dimension. In particular, seniors who reside outside Winnipeg are 1.6 times more likely to be hospitalized than their Winnipeg counterparts, across all four residential settings. "Region effects" of this sort are not uncommon in Manitoba and doubtless reflect the relative abundance of hospital beds in rural communities. In the multivariate analyses, those seniors with functional disability and those with numerous (three or more) chronic conditions were also significantly more likely to have been hospitalized in the six months preceding the interview.

Among those who experienced some hospitalization, differences initially emerged in both the average number of days and length of stay. As indicated in Table 15, these are most evident between the COMM sub-sample on the one hand and the three seniors' housing sub-samples on the other. Seniors living in their own homes in the community spent an average of ten more days in hospital than their counterparts in elderly persons' housing, due to longer

Table 15
Summary Statistics of Hospital Utilization
by Housing Type, January 1/86 - June 30/86

Housing Type*	% Users	In-Patient Days per User**	Admissions per User	Average Length Of Stay per User
COMM	11.5	20.2 (11.0)	1.5 (1.0)	14.9 (10.0)
EPH(NS)	11.8	9.1 (7.0)	1.2 (1.0)	8.1 (5.5)
EPH(S)	15.6	10.6 (6.5)	1.2 (1.0)	8.5 (6.5)
MLC	13.3	11.4 (7.5)	1.4 (1.0)	7.7 (5.8)

*See Table 4

**Unbracketted figures are mean values; bracketted figures are median values.

lengths of stay and not to more frequent admissions. These findings were confirmed in the multivariate analyses where the differences were shown to be statistically significant after controlling for region and functional ability, the only other variables having any systematic effect. While this straightforwardly suggests that seniors' housing may function to reduce average length of hospital stay (other things being equal), further analysis ruled out any such interpretation or conclusion. In particular, the differentials in hospital use across housing groups were wholly attributable to the presence of an "outlier" - i.e., an individual in the COMM sub-sample who experienced an admission to hospital lasting an unusually long 78 days. The possibility of this was strongly suggested in Table 15 where the mean and median values for the COMM sub-sample were sharply discrepant for both days per user and average length of stay. This was subsequently confirmed in a second multivariate analysis where, after excluding the one "outlier", there was no significant difference in hospital use across the housing groups.

c) Utilization and Cost of Medical Care

Among those in the sample who consented to allow access to the MHSC data, 84.4% (445/527) received some medical care over the six months ending June 30, 1986. The mean number of services per "user" was 13.1, with an associated cost to the medical care insurance program of $185; the corresponding median values are 9.0 and $112.

Medical care use and cost specific to the four residential settings is summarized in Table 16. Scanning the left-most column, the percent of residents who received some medical care over the six month interval varies across housing types, the most pronounced difference being between the COMM sub-sample (80%) and the three elderly persons' housing sub-samples (averaging

Table 16
Summary Statistics of Medical Care Utilization
by Housing Type, January 1/86 - June 30/86

Housing Type*	% Users	Services per User**	Costs per User
COMM	80.0	13.2 (8.0)	$182 (87)
EPH(NS)	84.6	13.3 (11.0)	178 (130)
EPH(S)	87.2	13.8 (9.0)	187 (118)
MLC	85.8	11.9 (8.0)	194 (107)

*See Table 4

**Unbracketted figures are mean values; bracketted figures are median values.

85.9%). However, statistical tests indicate that residents who live in their own homes aare no more likely to see a physician than those accommodated in any seniors' housing. The same conclusion applies to the small differences in medical services and associated costs reported in the middle and right-most columns of the table. Using either the mean or median values, there are no significant differences in services and costs per user across housing types.

In the multivariate (logistical linear regression) analyses, control variables included region (Winnipeg/non-Wnnipeg), gender, marital status, income, religion, functional ability, number of chronic conditions, perceived health, and availability and use of informal caregivers. The only variable exerting a significant effect on the odds of using medical care was the number of chronic conditions; specifically, seniors reporting three or more chronic conditions were more than twice as likely to see a physician than those reporting fewer than three conditions. Services per user are significantly higher among those who live in Winnipeg (where physicians are relatively abundant), those with functional disability, and those who perceive both their health and their income to be inadequate. Interestingly, costs per user do not vary significantly by the geographic dimension, indicating that the higher use of services by seniors in Winnipeg is concentrated in office visits and other relatively low cost categories of service. Costs per user vary systematically only with functional ability, as illustrated by the finding that those with the worst functional ability (high ADL and IADL scores) receive services costing more than twice the amount received by those with the best functional ability (low ADL and IADL scores).

Findings on Service Use Based on the Interview Data

Findings presented in this section are based on self-reports of formal services used over the six months preceding the interview. These services were previously described and analyzed in relation to Objective 1-e (pp. 33-36). There it was established that overall, and for many specific services, utilization differs significantly across the residential settings. Here the purpose is to further analyze those data by focusing on the users of the various services, and assessing the extent of service provision from sources other than the OCC to users in the different residential settings. In addition, the intent is to estimate the costs of selected services that might otherwise be provided by the OCC.

In assessing the raw data on service use obtained from the interview, it becomes apparent that many categories of service cannot be analyzed in any detail either because so few respondents report any use and/or because insufficient information is supplied on service frequencies and sources. Accordingly, the findings to be presented below relate to a minority group of services for which adequate information is available. Two of these services - nursing and homemaking - hold particular interest because they are dominant components of the formal home care program, and hence, whatever their source, may be costed using the official unit cost parameters.

Another group comprised of entertainment, congregate meals, shopping assistance and transportation services are more problematic since they are not routinely supplied by the OCC, and because there is no way to determine the relevant unit costs short of a very detailed cost accounting exercise that is beyond the scope and resources of the present study. The analysis of this latter group of services is thus unavoidably restricted to the observed

utilization differentials. Results for each group are presented and discussed in turn.

Summary statistics on the self-reported use of nursing and homemaking services are shown in Table 17. The percent of residents who report some use of nursing services over the six months preceding the interview varies only slightly across the housing types, and indeed the differences are not statistically significant. Differences in the reported frequencies of nursing service, as measured by the number of nursing hours per month per user, are suggestive of a substantial differential between seniors living in their own homes in the community (1.9 hours per user) and seniors living in multi-level care facilities (7.9 hours per user); but again the differences lack statistical significance. Indeed, in the multivariate analysis of these data, religious preference was the only variable having any significant explanatory power.

Although the data are limited, there are apparent differences in the source of nursing services across housing types. In particular, those in the COMM and EPH(S) housing groups obtained a lower proportion of their nursing care from sources other than the home care program (OCC) than did seniors in the EPH(NS) and MLC groups. While these differences are not statistically significant, it is interesting to note that the latter two groups obtained their non-OCC nursing care from different sources. Thus, the (seven) individuals in EPH(NS) who reported receiving nursing care from non-OCC sources obtained a total of 9.2 hours, including two hours from privately hired nurses and 7.2 hours from organizations (Red Cross, St. John's Ambulance, etc.) external to the EPH. In contrast, (nine) individuals in MLCs received a total of 81.5 hours from internal sources.

Table 17
Summary Statistics on Self-Reported Use
of Nursing and Homemaking Services
During the Six Months Previous to Interview
by Housing Type

Service Type	Housing Type*	% Users	Hours per Month per User	% Hours not from O.C.C.
Nursing	COMM	10.7	1.9	4.2
	EPH(NS)	15.4	5.3	44.8
	EPH(S)	13.5	3.0	19.8
	MLC	42.1	7.9	76.8
Homemaker/Household Tasks	COMM	18.0	36.4	0.0
	EPH(NS)	21.6	10.4	8.7
	EPH(S)	34.9	15.3	2.5
	MLC	31.5	7.6	6.8

*See Table 4

While the cost consequences of these sourcing differences cannot be directly determined (in the absence of the requisite unit cost data), the "program equivalent costs" may be estimated using the relevant OCC payment schedule for nursing services. To illustrate, "low" and "high" unit costs corresponding to the hourly costs of Direct Nursing Care (DNC) and VON services respectively may be applied to some or all of the nursing hours supplied to residents by organizations other than the OCC. Assuming (as the analysis indicates) that nursing hours from all sources do not vary across the housing types, the "program equivalent cost" (PEC) of non-OCC nursing hours may be calculated as follows:

PEC = CNH x TNH x SOURCE

where:

CNH = Cost per nursing hour to OCC
TNH = Nursing hours per month per user, all sources
SOURCE = Proportion of TNH from non-OCC sources

For the EPH(NS) group substitute the values:

CNH = $14.67* (DNC) or alternatively $23.00 (VON)
TNH = 4.6 (the average across the four housing types)
SOURCE = .448 as per Table 17

This yields a "low" PEC of ($14.67 x 4.6 x .448) $30.23, and a "high" PEC of ($23.00 x 4.6 x .448) $47.40. Similar calculations for the MLC group yield "low" and "high" PEC's of $51.83 and $81.25 respectively. It must be emphasized that the differences between these two housing groups in both the

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* To permit more valid comparisons with the VON contract cost per hour, this figure includes a direct salary cost (of the Home Care Coordinator) of $11.95 per hour and an indirect (overhead) cost of $2.72 per hour. The latter amount represents 22.8% of the direct cost and is equivalent to the average overhead for the regional offices of the OCC derived in an earlier study. See Office of Continuing Care (1975).

"high" and "low" PECs are more apparent than real, due to the statistical insignificance of the differences in SOURCE across the four residential settings. In any event, the principal purpose of the exercise was to illustrate how services might be notionally costed in the absence of more direct unit cost information, and in terms that have potential relevance to the OCC administration.

Returning to Table 17, the results for homemaking services display some marked variation across the housing types. Thus, the percent of residents who reported some use of homemaking services over the relevant interval varies significantly across housing types, as does the monthly number of hours per user. Interestingly, those living in their own homes in the community (COMM) are least likely to have used these services (18% vs. overall average of 26.5%), but at the same time yield a group of users who receive an atypically high number of homemaking hours per month (36.4 hours). This pattern (also evident in the multivariate analysis after controlling for functional ability, the only significant covariate), is in sharp contrast to those living in multi-level care facililties where 31.5% receive some services, but where users receive only 7.6 hours of homemaker service per month. On the other hand, there were no significant differences across the housing types in the proportion of services obtained from sources other than the home care program, the overall average being 3.2%.

Using these results it is possible to calculate "program equivalent costs" on the same logic as employed in the case of nursing services. Thus, assuming a ("low") hourly cost of homemaker services of $5.78, the PEC of the 0.9 hours of non-OCC homemaker services received monthly by users in the EPH(NS) housing group is readily calculated to be $5.20 (i.e., .9 x $5.78).

Alternatively, and assuming a ("high") hourly cost of $6.61, the PEC is $5.95. While such costs are, by definition, not borne by the formal home care program, they do illustrate the costs that may be associated with the provision of such services under other organizational auspices.

As mentioned at the outset of this section, the interview yielded reasonable information on another group of services, summary statistics on which are reported in Table 18. For each of the four services included in this table, the proportion of users varies significantly across the housing groups. The evident and not surprising pattern is one of relatively low values for seniors living in their own homes and relatively high values for seniors living in some type of elderly persons' housing. In effect, this finding mirrors the reality that access to formal services involving entertainment, congregate meals, shopping assistance and transportation arrangements is substantially greater in elderly persons' housing than it is in the general community. Interestingly, the statistically equivalent figures for shopping and transportation across EPH(NS) and EPH(S) beg the question of whether this distinction in elderly persons' housing is more apparent than real, at least for these two services. Turning to the results on service frequencies per user, the only significant difference across housing groups is in congregate meals. In this specific respect, the four groups effectively combine into two, with COMM and EPH(NS) forming one and EPH(S) and MLC the other. The relatively frequent provision of congregate meals to seniors in these latter facilities hardly comes as a surprise because at the time data were collected only the congregate meals component of the support services program was in operation.

Table 18
Summary Statistics on Self-Reported Use
of Selected Support Services
During the Six Months Previous to Interview
by Housing Type

Service Type	Housing Type*	% Users	Service per Month per User
Entertainment	COMM	2.0	5.7
	EPH(NS)	18.8	6.6
	EPH(S)	17.6	8.3
	MLC	24.2	10.5
Congregate Meals	COMM	2.0	4.3
	EPH(NS)	1.1	5.7
	EPH(S)	24.2	16.2
	MLC	26.0	19.8
Shopping Assistance	COMM	0.0	0.0
	EPH(NS)	4.7	8.2
	EPH(S)	5.3	6.3
	MLC	5.4	7.7
Transportation Assistance	COMM	4.0	2.5
	EPH(NS)	7.4	5.8
	EPH(S)	6.7	6.3
	MLC	12.8	2.3

*See Table 4

Conclusions to Cost of Existing Services

The preceding analyses of service utilization and cost based on both the primary (interview) data and the secondary (administrative) data support several general conclusions. First, the use and cost of formal home care does not generally differ across the housing groups, with the notable exception of nursing services where hours and costs per user are significantly higher in the MLCs. Second, the use of hospital and medical care does not differ across the housing groups after adjusting for inter-group differences in (I)ADL and socio-demographic characteristics. Third, seniors who use nursing and homemaker services obtain a variable proportion of these services from sources other than the formal home care program, depending (only weakly) on their housing arrangements. Fourth, the "program equivalent costs" of nursing and homemaking services obtained outside the formal home care program are non-trivial and should be included in any comprehensive assessment of support services where there is potential for increased (or decreased) public funding. Finally, with the exception of congregate meals, there is little empirical basis for differentiating one type of elderly persons' housing from another in the support services dimension.

Findings on Cost of Appropriate Services

From the outset of the study, it was recognized that the feasibility of attaining objective 3b - estimating the cost of increasing services to those seniors eligible based on need - would hinge on the outcome of the interview and, in particular, on the responses given to the following questions:

a) Are there any services you could use but don't currently receive?

b) Are there any services which you currently receive but could use more of?

For the sample as a whole, 22.2% (133/600) answered the first question in the affirmative and identified at least one service they would like to receive. In contrast, the second question elicited only 30 affirmative responses, representing but 5% of the overall sample. Thus, opportunities for meaningful analysis are effectively limited to investigating only one type of "underprovision". In addition, since respondents provided little or no indication of the service frequencies and time schedules that would be necessary to equate use with "need", the interview data provide little or no basis for estimating the incremental costs. In such constrained analytic circumstances, the best that can be done is to make some reasonable assumptions and work through some plausible "what if" scenarios. The main requirement is to avoid any pretence to precision.

An informal analysis of the interview data on "unmet needs" reveals:

1) no striking differences across housing groups in the proportion of seniors reporting an "unmet need" for some service;
2) an apparent preference over all housing groups for some additional services, including nursing care and homemaker services, that are available to others through the formal home care program;
3) an apparent preference over all housing groups for some additional services, especially meal services, transportation assistance and recreational programs, that are now available only in some elderly persons' housing;
4) a large majority (71.4%) of those reporting an "unmet need" require some or alot of assistance in the (instrumental) activities of daily living, and hence may well represent a problem of "false negatives" in service

delivery terms, i.e., of otherwise eligible seniors who receive no services;

5) a small minority (28.6%) of those reporting an "unmet need" require no assistance in (I)ADL and might well be deemed ineligible for services on this account.

On the basis of the foregoing and related specifics in the interview data, very rough estimates of "under-servicing" might be based on assumptions that:

a) under one-half (52/133) of those reporting an "unmet need" would qualify for formal home care on the basis of the services requested (ignoring the ADL and ADL information), and that these services would be provided at typical frequencies for typical periods of time (the "High Cost Scenario") or, alternatively;

b) that only those (42) who are assessed as "needy" on the basis of (I)ADL scores would qualify for services at typical frequencies for typical periods (the "Mid Cost Scenario") or, alternatively;

c) that program criteria for assessing need as in (b) above are combined with an assumption that service would be provided at one-half the typical frequencies for typical periods (the "Low Cost Scenario").

It bears emphasizing that the "unmet need" defined by the "Mid Cost" and "Low Cost" scenarios does not establish that the formal home care program has failed to serve eligible seniors, since eligibility is determined in practice on the basis of (I)ADL and other information.

For illustrative purposes only, the above scenarios may be costed for a six month period of service using a "typical" cost of $792 (based on the

sample data). Accordingly, and risking some false precision, the estimated six month costs of serving "unmet needs" in the study sample are:

"High Cost Scenario" = $52,272

"Mid Cost Scenario" = $33,264

"Low Cost Scenario" = $16,632

Expressed in relation to actual program costs of $78,450 (incurred in providing some home care to ninety-nine members of the sample over the first six months of 1986), these scenarios represent hypothetical program cost increments of 150%, 42% and 21% respectively. Such figures are edifying to the extent they illustrate the wide range of values spanned by these particular scenarios. Other scenarios and associated costs of "unmet need" may be readily, albeit arbitrarily generated. Knowing that the self-reports of "unmet need" are limited in both quantity and quality, the temptation to draw any other conclusions must be and will be resisted.

References

Alberta Department of Hospitals and Medical Care and Alberta Housing Corporation (1981) Multi-level Care Facilities: Evaluation of Models for Alberta, final report, Volume I. Toronto: Woods Gordon Management Consultants.

Blackie, N.K. (1983) "Alternative Housing and Living Arrangements for Independent Living", Journal of Housing for the Elderly, 1(1):77-83.

Chappell, N.L., L.A. Strain and A.A. Blandford (1986) Aging and Health Care, A Social Perspective. Toronto: Holt, Rinehart and Winston of Canada.

Clark, J.A. and N.E. Collishaw (1975) Canada's Older Population. Ottawa: Staff Papers Long Range Health Planning.

Estes, C.L. (1979) The Aging Enterprise. San Francisco, CA: Jossey Bass.

Fengler, A. and N. Danigelis (1983) "The Shared Home: Assessment of Interest and Need". Paper presented at SYSTED '82, Montreal, July.

Gourash, N. (1978) "Help-seeking: A Review of the Literature", American Journal of Community Psychology, 6(5):413-423.

Gutman, G.M. (1978) "Issues and Findings Related to Multi-level Accommodation for Seniors", Journal of Gerontology, 33(4):592-600.

Gutman, G.M. (1980) "The Elderly at Home and in Retirement Housing: A Comparative Study of Health Problems, Functional Difficulties, and Support Service Needs". In V. Marshall (ed.) Aging in Canada: Social Perspectives. Don Mills, Ontario: Fitzhenry and Whiteside, 189-200.

Health and Welfare Canada (1982) Manitoba/Canada Home Care Study - An Overview of the Results. Ottawa: Policy, Planning and Information Branch, Department of National Health and Welfare.

Hinrichsen, G.A. (1985) "The Impact of Age-concentrated Publicly Assisted Housing on Older People's Social and Emotional Well-being", Journal of Gerontology, 40(6):758-760.

Kay, L., B. Diamond and A. Monk (1986) "Congregate Housing for the Elderly: An Analysis of Program Adequacy and Effectiveness". Paper presented at the annual meeting of the Gerontological Society of America, Chicago, November.

McKinlay, J.B. (1972) "Some Approaches and Problems in the Study of the Use of Services - An Overview", Journal of Health and Social Behavior, 13:115-152.

Mishler, E.G. (1981) Social Contexts of Health, Illness and Patient Care. Cambridge, MA: Cambridge University Press.

Norris, V.K., M.A.P. Stephens, J.M. Kinney and A.E. McNeer (1985) "Family Caregiving to Elderly in Congregate Housing". Paper presented at the annual meeting of the Gerontological Society of America, New Orleans, November.

Office of Continuing Care (1975) Cost Analysis - Home Care Costs, May-September.

Poulin, J.E. (1984) "Age Segregation and the Interpersonal Involvement and Morale of the Aged", The Gerontologist, 24(3):266-269.

Powell, B.J. and J.K. Martin (1980) "Economic Implications of an Aging Society in Canada". In V.W. Marshall (ed.) Aging in Canada: Social Perspectives. Toronto: Fitzhenry and Whiteside.

Ruchlin, H.S. and J.N. Morris (1987) "The Congregate Housing Services Program: An Analysis of Service Utilization and Cost", The Gerontologist, 27(1):87-91.

Sheehan, N.W. (1986a) "Informal Support among the Elderly Public Senior Housing", The Gerontologist, 26(2):171-175.

Sheehan, N.W. (1986b) "The Etiquette of Helping in Congregate Housing". Paper presented at the annual meeting of the Gerontological Society of America, Chicago, November.

Snell, M.C. (1985) "Community Care for the Elderly: Costs and Dependency", Social Science and Medicine, 20(12):1313-1318.

Snider, E.L. (1980) "Factors Influencing Health Service Knowledge among the Elderly", Journal of Health and Social Behavior, 21:371-377.

Spasoff, R.A., A.S. Kraus, E.J. Beattie, D.E.W. Holden, J.S. Lawson, M. Rodenburg and G.M. Woodcock (1978) "A Longitudinal Study of Elderly Residents of Long-stay Institutions", The Gerontologist, 18:282-292.

Stark, A.J., G.M. Gutman and K. Brothers (1982) "Reliability of Level of Care Decisions in a Long-term Care Program", Journal of Community Health, 8(2):102-109.

Stephens, M.A.P. and M.D. Bernstein (1984) "Social Support and Well-being among Residents of Planned Housing", The Gerontologist, 24(2):144-148.

Stephens, M.A.P., J.M. Kinney and A.E. McNeer (1986) "Accommodative Housing: Social Integration of Residents with Physical Limitations", The Gerontologist, 26(2):176-180.

Varady, D.P. (1980) "Housing Problems and Mobility Plans among the Elderly", Journal of the American Planning Association, 46(3):301-314.